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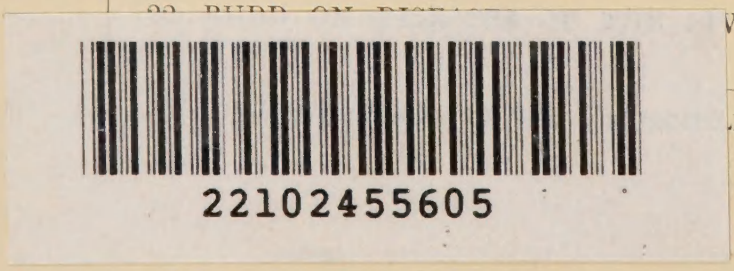
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# HALF-YEARLY ABSTRACT

OF THE

# MEDICAL SCIENCES.

JANUARY—JUNE

1853.

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THE

# HALF-YEARLY ABSTRACT

OF THE

# MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS:

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

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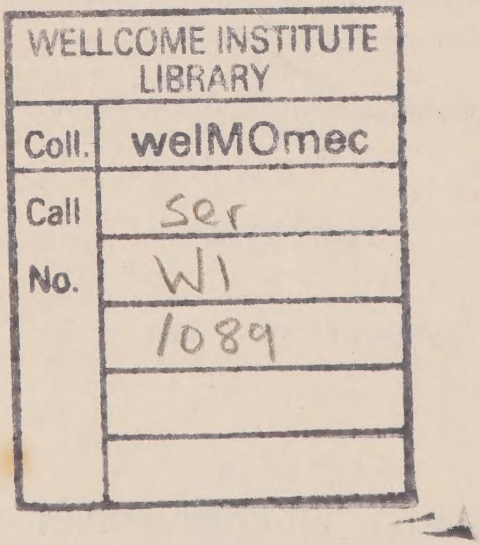

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# CONTENTS OF VOL. XVII.

## PART I.—MEDICINE.

### I.—*General Questions in Medicine.*


| ART. | | PAGE |
|---|---|---|
| 1. | Influence of Noxious Effluvia in the origin and propagation of Epidemic Diseases. By *Mr. Grainger* | 1 |
| 2. | On the Predisposing Causes of Epidemics. By *Dr. Carpenter* | 4 |
| 3. | On the Action of Ozone on Miasmata. By *M. Schönbein* | 5 |
| 4. | Some particulars from the Registrar-General's Report. From 'The Times' | 7 |
| 5. | On the Treatment of Fever by Sulphate of Quinine. By *Dr. Barclay* and *Dr. Dundas* | 9 |
| 6. | The Communicability of Cholera to Animals. By *Mr. Marshall* | 12 |
| 7. | Practical Sketch of the Asiatic Cholera of 1848, in an English Village. By *Mr. Statham* | 14 |
| 8. | The Modus Operandi of Mercury in the Cure of Asiatic Cholera. By *Mr. Taylor* | 15 |
| 9. | On arresting instantaneously Cholera Cramps in the Limbs. By *M. Guyon.* | 16 |
| 10. | On an Epidemic "Suette Miliare" in the Hérault. By *Dr. Swaine* | ib. |
| 11. | Some Remarks on Scarlatina. By *Dr. Gillespie* | 18 |
| 12. | Furunculoid Epidemic: appearance of Acute Pemphigus. By *Dr. M'Cormack* | 19 |
| 13. | On the Nature and Causes of Mountain Sickness. By *Dr. Speer* | ib. |
| 14. | Chloroform in Rheumatism. By *J. Kirby*, LL.D | 20 |
| 15. | Statistical Information respecting Tuberculosis. By *S. K. Chambers* | 21 |


### II.—*Special Questions in Medicine.*

(a). *Concerning the Nervous System.*


| | | |
|---|---|---|
| 16. | On the Proximate Cause of Insanity. By *Dr. Davey* | 22 |
| 17. | On some of the Vital Statistics of Insanity. By *Dr. Robinson* | 24 |
| 18. | Opium in Irritable and Anæmic States of the Brain in Fever. By *Dr. Sandwith* | 28 |
| 19. | On Interruption of the Respiration as a Sign of Impeded Activity in the Brain. By *Dr. Landgraf* | 32 |
| 20. | Cases of Hemiplegia produced by the Plugging of one of the *Cerebral Arteries*. By *Dr. Ruhle* and *Dr. Burrows* | ib. |
| 21. | On Epileptiform Neuralgia. By *M. Trousseau* | 36 |
| 22. | Rapid Cure of a Severe Form of Sciatica. By *Dr. Kirby* | 37 |
| 23. | On the Proportion of Subjects bitten by Mad Animals, who become affected with Hydrophobia. By *Prof. Renault* | 38 |
| 24. | On Spasmodic Diseases. By *Dr. Wood* | 40 |
| 25 | On Muscular "Tic," By *Dr Marshall Hall* | 47 |
| 26. | On the Influence of Posture in the Treatment of Epilepsy. By *Dr. Marshall Hall* | 48 |

| ART. | | PAGE |
|---|---|---|
| 27. | Nervous and other Cases in which Tracheotomy may be required. By *Dr. Marshall Hall* | 49 |
| 28. | On the questionable utility of Tracheotomy in any kind of Epilepsy. By *Dr. Radcliffe* | 50 |
| 29. | On Cotyledon Umbilicus in Epilepsy. By *Dr. Graves* and *Dr. Grieve* | 56 |
| 30. | Case of Hidden Seizure followed by Epilepsy and Mania. By *Dr. Marshall Hall* | 59 |
| 31. | On the Influence of Day and Night upon the Fits of Epilepsy. By *Dr. Everts* and *Van Leeuwen* | 60 |
| 32. | On the questionable importance of the Aura Epileptica as a symptom of Epilepsy. By *M. Herpin* | 61 |
| 33. | Cases bearing upon the Treatment of Poisoning by Strychnia. By *Dr. Forster and others* | 62 |
| 34. | Case of Traumatic Tetanus cured by Chloroform. By *Dr. Dusch* | 63 |
| | (b). *Concerning the Respiratory System.* | |
| 35. | The prevention of Epizootic Pneumonia by Inoculation. By *M. Willems* | 64 |
| 36. | Sarcinæ in the Lungs. By *Dr. Zenker* | 65 |
| 37. | The Influence of Hydrocyanic Acid on the Larynx. By *Dr. Cogswell* | 65 |
| 38. | On Anæsthetic Inhalations in certain painful Affections of the Chest. By *Dr. Carrière* | 67 |
| 39. | On the use of Tracheotomy in Croup. By *Mr. H. Smith* | ib. |
| 40. | On the Question of Relation between Phthisis and Hysteria. By *Dr. Theophilus Thompson* | 69 |
| 41. | On the Characters of the Prevalent Pleuro-pneumonia. By *Dr. Risdon Bennett* | 71 |
| | (c). *Concerning the Circulatory System.* | |
| 42. | The Fibrinous Constituent of the Blood in relation to Disease. By *Mr. B. W. Richardson* | 73 |
| 43. | On some of the more important points in Rheumatic and Non-Rheumatic Pericarditis. By *Dr. Ormerod* | 76 |
| 44. | On the Use of Potash in Scurvy. By *Dr. Hammond* | 77 |
| 45. | On the Relation of the Arcus-Senilis to Fatty Heart. By *Dr. Hoskins* | 79 |
| 46. | On the Diagnosis of Aneurism of the Aorta. By *Dr. Crisp* | ib. |
| | (d). *Concerning the Alimentary System.* | |
| 47. | On Chlorate of Potash in Cancrum Oris, &c. By *Dr. J. H. Babington* | 81 |
| 48. | A Case of Sarcina Ventriculi. By *Dr. Hassall* | ib. |
| 49. | On Perforating Ulcer of the Stomach from Non-Malignant Disease. By *Dr. Crisp* | 83 |
| 50. | On the Use of Opium in Irritable Rectum with Constipation. By *Dr. Barlow* | 86 |
| | (e). *Concerning the Genito-Urinary System.* | |
| 51. | On Albumen in the Urine of Various Diseases. By *M. Heller* | 88 |
| 52. | On the Development of Torulæ in the Urine, &c. By *Dr. Hassall* | ib. |
| 53. | Presence of Sugar in the Urine of Epileptics. By *MM. Michea* and *Regnoso* | 91 |
| 54. | The Action of Liquor Potassæ on Healthy Urine. By *Dr. Parkes* | 92 |
| 55. | On the Employment of Urea as a Diuretic. By *Dr. Tanner* | 93 |
| 56. | On Prolapsus of the Anterior Wall of the Bladder as one cause of Fetid, Phosphatic, and Mucous Urine. By *Dr. Golding Bird* | 94 |
| 57. | On the Effects of continued exposure to Turpentine vapours. By *Dr. Harris* | 96 |
| 58. | A peculiar Case of Hæmaturia. By *Dr. Hooper* | 98 |
| | (f). *Concerning the Cutaneous System.* | |
| 59. | Case of Vitiligooidea, with Remarks. By *Dr. Ranking* | 99 |
| 60. | On the Constitutional Treatment of Scald Head. By *Mr. Hunt* | 101 |
| 61. | On Collodion in Smallpox and Erysipelas. By *Dr. Christen* | 103 |
| 62. | On the External Application of Iodine in Erysipelas. By *Mr. Norris* | 105 |

# PART II.—SURGERY.

## I.—*General Questions in Surgery.*

### (a). *Concerning Inflammation.*


| ART. | | PAGE |
|---|---|---|
| 63. | A practical Sketch of Low Inflammation. By *Mr. Statham* | 106 |


### (b). *Concerning Tumours.*


| | | |
|---|---|---|
| 64. | A Case of Encysted Tumour successfully treated by Puncture of the Sac and Cauterisation of the Interior. By *Dr. Mc Donnell* | 109 |
| 65. | Statistics of Operations for Cancer. By *Mr. Paget* | 110 |


### (c). *Concerning Ulcers.*


| | | |
|---|---|---|
| 66. | Treatment of Ulcers by Exclusion of the Atmospheric Air. By *Mr. Holt* | ib. |
| 67. | Chloroform in Phagedænic Ulcers. By Mr. Hancock | 111 |


### (d). *Concerning the Blood-Vessels.*


| | | |
|---|---|---|
| 68. | Result of 82 Cases in which Large Arteries were tied. By *M. Roux* | 112 |
| 69. | Cases of Aneurism treated by Compression. By *Mr. Benjamin Phillips, Mr. Monro, Mr. Cock, Mr. Reeves,* and *Mr. Coates* | 118 |
| 70. | Treatment of Aneurism by Galvano-Puncture. By *M. Boinet* | 119 |


### (e). *Concerning Fractures and Dislocations.*


| | | |
|---|---|---|
| 71. | On a New Method of Treating Fractures. By *Mr. Winchester* | 120 |
| 72. | On Gutta Percha in certain Dislocations and Fracture. By *M. Lesueur* | 121 |
| 73. | On the Treatment of Compound Fractures by "Occlusion." By *Mr. Trastour* | 122 |
| 74. | On Provisional Callus. By *Dr. Hamilton* | ib. |


### (f). *Concerning Diseases in the Bones and Joints.*


| | | |
|---|---|---|
| 75. | On the Nature and Treatment of certain Painful Affections in Bones. By *Mr. Langston Parker* | 123 |
| 76. | A Case of Pulsating Tumour of Bone. By *Dr. Smith* | ib. |
| 77. | Iodine Injections into Joints. By *M. Velpeau* | 125 |


### (g). *Concerning Amputation and other Operations.*


| | | |
|---|---|---|
| 78. | On Immediate Amputation after Injuries. By *Mr. Horner* | 126 |


### (h). *Concerning Anæsthetics.*


| | | |
|---|---|---|
| 79. | On Oxygen Gas Inhalations in Syncope from Chloroform. By *Dr. Abraham* | 127 |


## II.—*Special Questions in Surgery.*

### (a). *Concerning the Head and Neck.*


| | | |
|---|---|---|
| 80. | A New Operation for some Cases of Double-Ectropion. By *M. Mirault* | 127 |
| 81. | On the Eye-Speculum in the Diagnosis of Eye-Diseases. By *M. Donders* | 128 |
| 82. | On Phosphène. By *M. Serre* | 130 |
| 83. | Case showing that loss of Contractility in the pupil is caused by Paralysis of the Third Nerve. By *Mr. France* | 132 |
| 84. | Case of Dislocation of the Eye. By *Dr. Jameson* | 133 |
| 85. | On the Removal of Foreign Bodies from the Cornea. By *M. Chassaignac* | 134 |
| 86. | A Novel Rhino-plastic Operation. By *Dr. M'Donnell* | 135 |
| 87. | Hypertrophy and Prolapse of the Tongue. By *Mr. Humphrey* and *Mr. Hodgson* | 137 |
| 88. | On the Operation for Cleft-Palate. By *Mr. Gay* | 140 |
| 89. | On the Application of Nitrate of Silver in Acute Tonsillitis. By *M. Herpin* | 142 |
| 90. | A remarkable Case of Fracture of the Processus Dentatus. By *Dr. Parker* | ib. |
| 91. | On a New Mode of performing Tracheotomy. By *Mr. H. Thompson* | 144 |

(b). *Concerning the Chest, Abdomen, and Pelvis.*


| ART. | | PAGE |
|---|---|---|
| 92. | An Instrument for Treating Fracture of the Clavicle. By *Dr. Crawford* | 145 |
| 93. | A Curious Case of Gunshot Wound of the Lungs. By *Dr. A. Christison* | 146 |
| 94. | A Case in which the Abdominal Aorta was Tied. By *Dr. Monteiro* | 148 |
| 95. | A Case Requiring the Operation for Artificial Anus. By *Mr. Curling* | 149 |
| 96. | On Obstruction of the Bowels. By *Mr. Benjamin Phillips* | 151 |
| 97. | Mechanical Support in Prolapsus Ani. By *Mr. Deane* | 152 |
| 98. | A New Operation for the Extraction of Calculi from the Membranous Portion of the Urethra. By *M. Demarquay* | 153 |
| 99. | On the Solution of Urinary Calculi. By *Dr. Bence Jones* | 154 |
| 100. | On the Utility of Administering Opium by the Urethra in some cases. By *M. Riberi* | 155 |
| 101. | A New Operation for Hydrocele. By *M. Argumosa* | 156 |
| 102. | Air-Compressor of the Testicle. By *Mr. Hutchinson* | ib. |
| 103. | On the Mercurial and the Non-Mercurial Treatment of Syphilis. By *Dr. Egan* | 157 |
| 104. | Iodide of Potassium in Syphilis. By *Dr. Davieri* | 161 |
| 105. | On a New Way of Treating Gonorrhœa. By *Mr. Milton* | 161 |
| 106. | On Copahine-Mège Capsules in Gonorrhœa. By *M. Jozeau* | 162 |


(c). *Concerning the Upper Extremity.*


| | | |
|---|---|---|
| 107. | American Statistics of Amputations at the Shoulder-joint. By *Dr. S. Smith* | 163 |
| 108. | Backward Luxation of the Ulna Alone. By *M. Riberi* | ib. |
| 109. | Case of Amputation at the Hip-joint. By *Mr. C. G. Guthrie* | 164 |


(d). *Concerning the Inferior Extremity.*


| | | |
|---|---|---|
| 110. | Case of Excision of the Head of the Femur. By *Dr. Buchanan* | 166 |
| 111. | Case of Excision of the Head of the Femur. By *Mr. Jones* | 170 |
| 112. | Sequel to Mr. Fergusson's Case of Excision of the Head of the Femur. By *Mr. H. Smith* | 175 |
| 113. | The Treatment of Fracture of the Femur by a Simple Modification of Liston's Splint. By *Mr. Butcher* | 176 |
| 114. | Elephantiasis Arabum of the Inferior Extremity cured by Ligature of the Femoral Artery. By *Dr. Carnochan* | 178 |
| 115. | A New Way of Remedying Cartilaginous Bodies in the Knee-joint. By *Mr. Syme* | 180 |
| 116. | Some Statistical Information respecting Compound Fractures of the Leg and Thigh. By *Dr. Norris* | 182 |
| 117. | The Treatment of Obstinate Ulcers and Eruptions of the Leg without Confinement. By *Mr. Chapman* | 183 |
| 118. | On the Lateral Deviation of the Great Toe. By *M. Malgaigne* | 184 |


---

# PART III.

## MIDWIFERY, AND DISEASES OF WOMEN AND CHILDREN.

(a). *Concerning Midwifery.*


| | | |
|---|---|---|
| 119. | Sudden Enlargement of the Abdomen During Pregnancy. By *Dr. Channing* | 186 |
| 120. | The Hour of Birth in 2019 Cases. By *Mr. West* | 188 |
| 121. | On Fatty Degeneration of the Placenta, and its Consequences. By *Dr. Barnes* | 190 |
| 122. | On Natural Degeneration of the Placenta at the End of Pregnancy. By *Dr. Druitt* | 191 |
| 123. | Observations and Statistics of Forceps Operations. By *Dr. Arneth* | 193 |
| 124. | Cases of Placenta Prævia. By *Dr. Waller* | 196 |
| 125. | Transfusion of Blood after Flooding. By *Mr. Turner* | 197 |

| ART. | | PAGE |
|---|---|---|
| 126. | On the Induction of Premature Labour before the Seventh Month of Pregnancy. By *Dr. Robert Lee* | 198 |
| 127. | On the Comparative Advantages of Cæsarian Section and Premature Abortion. By *Prof. Hubert* | 200 |
| 128. | Cases of Cæsarian Section. By *M. Decæne*, *Dr. Waller*, and others | 201 |
| 129. | Morphia and Chloroform in Puerperal Convulsions. By *Mr. Bolton* | 206 |
| 130. | On Chloroform as a Means of Preventing Puerperal Mania. By *Prof. Simpson* | 207 |
| 131. | On the Influence of the Puerperal State in the Duration of Disease. By *M. Gendrin* | ib. |
| 132. | Composition of Milk in the Female in the State of Health and Disease. By *MM. Vernois* and *Becquerel* | 208 |
| 133. | On Rupture of the Perinæum. By *Mr. J. B. Brown* | 209 |
| 134. | The Treatment of Ruptured Perinæum. By *Prof. Roser* | 211 |
| 135. | Cases of Extra-Uterine Gestation. By *Dr. Ramsbotham*, and others | ib. |
| | (b). *Concerning the Diseases of Women.* | |
| 136. | On Discharge of Fluid in Innocent Tumours of the Breast. By *M. Richard* | 215 |
| 137. | On the Results of Speculum Examination in Women suffering from Gonorrhœa. By *Dr. Egan* | 216 |
| 138. | A New Mode of Treatment in Prolapsus Uteri. By *M. Desgranges* | 217 |
| 139. | Prolapsus Uteri cured by Retroflexio Uteri. By *M. Seyfert* | 218 |
| 140. | Cases of Prolapsus Uteri. By *Dr. Ramsbotham* and *Dr. Oldham* | ib. |
| 141. | On a New Mode of Operating for Ovarian Dropsy. By *Mr. J. B. Brown* | 221 |
| 142. | On the Position of the Patient in Tapping Ovarian Cysts. By *Dr. Tanner* | 223 |
| 143. | On Inflammatory and Non-inflammatory Ruptures of Ovarian Cysts. By *Prof. Simpson* | 225 |
| 144. | On the Pathology and Treatment of Sanguineous Pelvic Cysts. By *Dr. Tilt* | ib. |
| | (c). *Concerning the Diseases of Children.* | |
| 145. | The Effect of the Horizontal Posture upon the Mortality in the Inmates of Foundling Hospitals. By *M. Hervieux* | 227 |
| 146. | The Purulent Diathesis in Newly-born Children. By *M. Hervieux* | 228 |
| 147. | On Scleroma in Newly-born Infants. By *M. Pastorella* and *M. Clertan* | 229 |
| 148. | On the Epidemic Mental Diseases of Children. By *Mr. Cooke* | 230 |
| 149. | On Spasm of the Glottis. By *Dr. Lederer* | 232 |
| 150. | The Removal of Mucus in the Suffocative Bronchitis of Children. By *M. Valleix* | 233 |
| 151. | On the Syphilitic Affection of the Liver in Children. By *Dr. Böhmer* | ib. |
| 152. | On Obstruction of the Urethra as a Cause of Vesical Irritability in Children. By *Dr. Fleming* | 234 |
| 153. | Chloroform in certain Cases of Retention of Urine in Children. By *Dr. Guisard* | 236 |


## REPORTS ON THE PROGRESS OF THE MEDICAL SCIENCES.

### I.—*Report on Medicine.*


| | | |
|---|---|---|
| 1. | *Dr. Webster* on the Sanitary Condition of England in 1852 | 241 |
| 2. | *Dr. Polli* on Transfusion of Blood | 247 |
| 3. | *M. Melsens* and *Dr. Parkes* on the Treatment and Prevention of Slow Mercurial and Saturnine Poisoning by Iodide of Potassium | 249 |
| 4. | *Dr. Gull* on Electricity as a Remedial Agent | 254 |
| 5. | *M. Herpin* on the Treatment of Epilepsy | 256 |
| 6. | *Dr. Radcliffe* on the Pathology of affections Allied to Epilepsy | 257 |

| ART. | | PAGE |
|---|---|---|
| 7. | *Dr. Mackensie* on the Nature and Proximate Cause of Phlegmasia Dolens | 269 |
| 8. | *Dr. Küchenmeister* on the Action of Anthelmintics | 271 |
| 9. | *Dr. Golding Bird* on Urinary Deposits | 272 |
| 10. | *Dr. Gray* on Rennet in Diabetes | 275 |


## II.—*Report on Surgery.*


| | | |
|---|---|---|
| 1. | *Mr. Haynes Walton* on Operative Ophthalmic Surgery | 279 |
| 2. | *Mr. Bishop* on the Pathology and Treatment of Deformities | 286 |
| 3. | *MM. Pravaz* and *Deslongchamps* on the Treatment of Aneurism by Injection of a Solution of Perchloride of Iron | 292 |
| 4. | *Mr. Lizars* on a New Mode of Operating in Varicose Aneurism | 293 |
| 5. | *Dr. Chalmers* and others on the Treatment of Snake-bites by Stimulants | ib. |
| 6. | *M. Nelaton* on the Treatment of Syncope from Chloroform by Inversion of the Body | 296 |
| 7. | *M. Sperino* on Syphilization | ib. |
| 8. | *Mr. Gay* on the Dangers of the Taxis | 297 |
| 9. | *Mr. Wade* on Stricture of the Urethra | 299 |
| 10. | *Dr. Van Oven* on a Case of Spontaneous Fracture of the Thigh-bone in himself | 304 |


## III.—*Report on Midwifery and Diseases of Women and Children.*


| | | |
|---|---|---|
| 1. | *Prof. Murphy* upon the Use of the Forceps in Difficult Labour | 305 |
| 2. | *Dr. Hamilton* on the advantages resulting from a Timely Use of the Forceps | 312 |
| 3. | *Dr. Mackensie* on the Source of Hæmorrhage in cases of Partial Separation of the Placenta | 315 |
| 4. | *Dr. Tilt* on the Diseases of Women | 317 |
| 5. | *Mr. Brudenell Carter* on the Pathology and Treatment of Hysteria | 321 |
| 6. | *Dr. Cormack* on the Galactagogue and Emmenagogue Effect of Warm Applications to the Mammæ | 322 |
| 7. | *Dr. Barnes* upon the relations between Menstruation, Conception, and Lactation, and the influence of Lactation in causing Abortion | 329 |
| 8. | *Mr. J. B. Brown* on Vaginal Cystocele and a New Operation for its Cure | 331 |


## IV.—*Report on Physiology.*


| | | |
|---|---|---|
| 1. | *M. Emil du Bois-Reymond* on the Electrical Changes in Muscle During Contraction | 337 |
| 2. | *Dr. E. Brown-Séquard* on the influence of Red-blood in restoring the Irritability of Muscles and Nerves after it has been lost for some time | 342 |
| 3. | *Dr. Claude Bernard* on the Local Increase of Temperature resulting from the Division of the Sympathetic Nerve in the Neck | 348 |
| 4. | *Mr. Bishop* on the Causes of Impediment of Speech | 351 |
| 5. | *MM. Medicus* and *Physiologus* on the Development of Worms | 354 |
| 6. | *Dr. E. Brown-Séquard* on the Cause of Hybernation in the Tenrec; showing that this cause is Cold, and not Heat and Dryness, as is supposed | 356 |

# HALF-YEARLY ABSTRACT

OF

# THE MEDICAL SCIENCES,

*&c. &c.*

## PART I.

## PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

### SECT. I.—GENERAL QUESTIONS IN MEDICINE.

ART. 1.—*Influence of Noxious Effluvia in the origin and propagation of Epidemic Diseases.* By R. D. GRAINGER, Esq.

THE following remarks upon the influence of human effluvia in this respect are extracted from this very admirable and instructive paper, as being the expression of facts which are less familiar than those which concern the emanations arising from privies, cesspools, and imperfect drains. It is scarcely possible to insist too much upon the vital importance of truths like these, for with Mr. Grainger, we are compelled to believe that "the predisposing causes of disease are infinitely more important than what are called the immediate or exciting causes."

*Influence of human effluvia.*—According to my own opportunities of observation, the most injurious of all the causes operating in the diffusion of epidemic diseases, are the effluvia proceeding from the human body, and especially from the lungs and the skin. The special deleterious agent consists of the effete and, as it has been proved experimentally, highly putrescent organic matter, mingled with the expired air. That it is, when reintroduced into the living body, liable to be highly injurious, may be inferred from the fact of the careful provision made by nature for its incessant elimination from the system. That it is small in amount, is no objection to the intensity of its action; for to the physiologist it is well known that a minute quantity of a powerful agent—the putrid matter introduced on the point of a needle in the inspection of a dead

body—a single drop of concentrated prussic acid placed in the mouth of an animal—is sufficient to destroy life. It is in overcrowded bedrooms, in unventilated schools, workhouse dormitories, &c., that this effete matter taints the air, and, entering the blood, poisons the system. That the remarkable diminution in the amount of carbonic acid evolved from the lungs, where persons, as in crowded and unventilated apartments, breathe an impure atmosphere, acts in such cases injuriously, admits of no doubt; but the evil, *quoàd* the development of fever, scarlatina, cholera, and so forth, depends on the organic, and not on the chemical products of respiration. As one indication of this, it may be explained that it is possible, under certain circumstances, to observe the action of the former when separated from the latter. As soon as the expired air quits the body, the matters of which it consists have a tendency to separate; and as regards the two substances under consideration, the carbonic acid mixes with the atmosphere on the principle of diffusion; whilst the animal excretion, no longer held in solution by the colder external air, is deposited, and particularly clings to woollen articles, as bedding and clothes, which last, as it is well known to medical men, clergy, and others, will often retain for hours, or even longer, a foul smell from this cause alone. When this matter, from neglect, is allowed to accumulate, it will affect the health. An instance of this was mentioned to me by the surgeon of a large pauper school, where the health of the boys was decidedly improved by substituting, for the usual dress, clothes capable of being readily washed.

It is, however, familiar to all practitioners, that human effluvia especially exhibit their poisonous influence when either multitudes of human beings are crowded together, or where a smaller number are placed in confined and unventilated sleeping places. Many instances of the influence thus excited on all kinds of epidemic disease have come under my notice; but only a few illustrative examples can here be adduced. In making these selections, it will be my object to present instances which, as far as possible, display the operation of some one individual agent; for when, as usually happens among the poor, a multitude of unfavorable conditions are present, it is extremely difficult to define and demonstrate the deleterious agency of each.

The following case illustrates the effects of overcrowding, in respect to cholera. During the epidemic of 1849, the inmates of a reformatory establishment for young women suffered intensely from the pestilence; 40, out of a total of 96, being attacked, and 15, or rather more than 15 per cent., dying. Now, these poor sufferers were previously in perfect health: they were well fed, well clothed, and, in short, carefully tended; but the dormitories were low, and much crowded; the windows, for the sake of seclusion, were partly blocked up, which greatly interfered with the ventilation. After a careful examination, I could detect no other cause than this for the sudden outbreak, occurring at a period when there was little cholera in the neighbourhood.

As regards the influence of overcrowding on the development of low fever, I may appeal to the experience of every medical practitioner whose duties call him much among the poor. It matters not whether we speak of the closely-packed common lodging-house; of rows of houses built back to back; of the small, unventilated, and often single sleeping apartment of the mechanic; or of the ill-built cottages in rural districts, with their one bed-room, overhanging thatch, and small lattice; wherever, either from numbers or the want of ventilation, we have the fetid, sickening air, generated by human effluvia, there assuredly we shall find fever. Although observed especially among the poor, fever, as it occurs in this country, is not, however, essentially dependent on poverty and destitution; want may, indeed, aggravate the evil, and actual famine (as we unhappily saw a few years ago in Ireland, and in the inhabitants

of Ireland who fled to the manufacturing districts of England) may give immense development to typhus; but that persons well fed, living in comfort, and in strong health, may suffer severely from low fever, is shown by a large experience.

One of the best illustrations, perhaps, is furnished by the sailors belonging to the collier vessels frequenting the Thames. These men, as a body, are in the prime of life, robust, and well fed; but, as I found by examining many of these vessels, the place where they sleep, the forecastle, is excessively small and confined; with this serious additional evil, that, as the hatchway is usually flush with the deck, it becomes necessary, whenever there is much sea, to close it down, when the unfortunate sailors must be without any window, as if shut up in a close box. When, too, the vessels come to London, as only one man is required to keep watch at night, all the sailors are crowded at the same time into their closely-packed berths. Some years ago, the attention of Mr. Busk, the distinguished surgeon of the Seamen's Hospital Ship, was attracted to the large number of typhous cases which were admitted, amounting in 1841 to 147, and in 1842 to 167; and to the fact that, of all the vessels in the Thames, the colliers were most subject to fever. In investigating this question, I could detect no other cause than the polluted air which these men must have breathed in the confined forecastle. That there is nothing connected with a sailor's mode of life to expose him to typhus, is proved by the experience of well-managed vessels; and, as one among the many proofs which might be adduced, I may mention that Mr. Clark, who made ten voyages to India as surgeon in Messrs. Green's fine vessels, never had a single case of typhus.

To those who are practically acquainted with the poorer parts of populous towns, it would be needless to point out that the common lodging-houses, and especially those occupied by the Irish, inflict an almost incredible amount of evil on the community: they are the common foci of all epidemic diseases; they frequently are the means of introducing smallpox into the locality where they are situate; and they are a never-failing source of expenditure to the parochial authorities. Although other sources of sickness may prevail, filth, neglect, and destitution—this last, however, by no means so often as supposed—the one prevailing evil and special characteristic is enormous overcrowding, carried to an extent which those unacquainted with the subject can scarcely, even in idea, realize. In the valuable recent report of Captain Hay, the Commissioner of Police appointed to superintend the carrying out of the Common Lodging-House Act in the metropolis, and to whom so much credit is due for carrying into operation a difficult and novel measure, some remarkable illustrations are given. In one eight-roomed house, 103 persons, the population of a hamlet, were herded together; in one room, 14 feet 6 inches square, thirty-seven people were found lying huddled together on the floor. In many of these instances, the space for each inmate could not have been more than forty cubic feet; whilst the lowest amount required for health in a sleeping-room is 500 cubic feet, or twelve times the amount.

My own experience corroborates these statements of Capt. Hay. On entering some of these deplorable places, I have found every possible space occupied by men, women, and children; and an atmosphere so fetid as to be almost overpowering to a stranger; causing, indeed, in some instances, nausea and actual vomiting.

That persons habitually breathing an air thus polluted by poisonous exhalations, should become the victims of zymotic disease, can excite no surprise. As to low fever, the amount is enormous. I had occasion, two years since, to examine some of the courts in Gray's Inn Lane; and in one of them was an Irish lodging-house, in which alone twenty cases of fever had occurred in two

months.* Another and more marked instance was lately mentioned to me at Leeds, in which seventeen cases of typhoid fever were, about two years since, received in one week at the House of Recovery, from two of these lodging houses; the cost to the parish for this week's work being £50.

It is satisfactory to learn that the Act of Parliament for regulating common lodging houses, for which the community is indebted to the Earl of Shaftesbury, has been extensively put into operation in London and the provinces, with the best results, both moral and physical. At Portsmouth, where there are not fewer than five hundred of these dwellings, I was informed by Dr. Slight, the Inspector, and by Mr. Piercy, the medical officer of the district, that in those houses placed under regulation, there had been a general reduction of disease, especially of fever; and it was particularly stated, that no second case of fever had occurred; whereas, in ordinary circumstances, as shown above, where typhus once breaks out, the rule is that it spreads among the inmates, many of whom often fall victims to the pestilence.

## Art. 2.—*On the Predisposing Causes of Epidemics.* By Dr. Carpenter, F.R.S.

(*Medico-Chir. Rev.*, Jan. 1853, pp. 175-177.)

The generally-recognised predisposing causes of zymotic diseases, are all reducible to one of three categories:—

(1) Those, namely, which tend to introduce into the system decomposing matter that has been generated in some external source;—(2) Those which occasion an increased production of decomposing matter in the system itself;—and (3) Those which obstruct the elimination of the decomposing matter normally or excessively generated within the system, or abnormally introduced into it from without.

1. Under the first head will rank putrescent food, water contaminated by sewerage or other decomposing matter, and air charged with miasmatic emanations.

2. Under the second, any unusual source of degeneration of the tissues within the body, such as presents itself in the puerperal state, after severe injuries, or as a consequence of excessive muscular exertion.

3. Under the third, an insufficient supply of air, a high external temperature (which slackens the respiratory process), and the ingestion of alcohol.

We cannot assign a definite place to starvation, until we more clearly know the cause of the retention of the decomposing matter within the body.

Any one of these causes will tend to produce *an accumulation of disintegrating azotised compounds, in a state of change, in the circulating current;* and this is precisely the condition which, on the fermentation-theory, will afford the greatest readiness to the development of any zymotic poison in the system, whatever the specific nature of that poison may be. But as each of these causes will act separately, their potency is vastly augmented when they act concurrently; as when the puerperal patient, whose special liability arises from the source of disintegrating matter within the system, is also subjected to putrescent emanations from some external source, and is pent-up in a heated atmosphere, very insufficiently renewed. Let any poison, capable of engendering puerperal fever, be applied to a female thus circumstanced, and our

* Report on the present state of certain parts of the Metropolis, and on the Model Lodging-Houses of London. By R. D. Grainger, Esq. Ordered to be printed by the House of Commons, 1851.

readers will not have much doubt about the fatality of the result. Or, again, if to the influence of the fatigue and exposure of a long march in a tropical country, be added that of overcrowding in tents or barracks, and on that be superimposed the ingestion of putrescent water, or of alcoholic liquors in excessive amount—and if the individuals, thus primed, be exposed to the poison of cholera, dysentery, or fever,—the experience of our Indian army tells a fearful tale of the consequences of such a combination.

Looking at the question, then, in the first place, as one of experience simply, we believe that no one who duly weighs the evidence, can hesitate to admit the facts on which our superstructure is based. Looking, secondly, to the immediate consequences of each of the causes we have enumerated, we believe that no physiologist can hesitate in admitting the possibility, to say the least, of the *rationale* which we have assigned for every one. And when we find that each of these causes, without a single exception, tends to induce *one and the same condition of the blood*, the conclusion seems to us almost irresistible, that this condition of the blood,—in which it is charged with decomposing organic compounds,—is that which is the immediate source of its liability to be affected by the introduction of zymotic poisons. All this is a matter of direct *induction;* and the only hypothetical part of the doctrine, is the occurrence of anything like fermentation as a consequence of that agency. Here we consider that our doctrine affords to the fermentation-theory a support of which it stands greatly in need; for if experience demonstrate, that zymotic poisons have little morbific power over blood which is exposed to them in a state of purity, but immediately exert their malign influence when the blood is unduly charged with organic matter prone to change, the *modus operandi* of the poison acquires so remarkable an additional feature of resemblance to that of "ferments," that the essential correspondence of the two seems to us almost indubitable.

If it be inquired, what is the practical bearing of this discussion, we at once reply that, if our view be correct, it would be possible to extinguish the greater number of epidemic diseases, however intense or abundant may be the atmospheric or other agencies which constitute their potential causes, by preserving the blood of every individual in that state of unfermentibility (if we may coin such a word), which shall effectually prevent these poisons from finding the conditions of their development within the body; this end being to be attained, on the one hand, by preventing (so far as may be possible) any unusual production of fermentible matter in or out of the body; and on the other, by promoting its removal when it is inevitably generated (as in the puerperal state), through the respiratory process, which ought to be favoured as much as possible, not merely by a free supply of air, but by the reduction of that air to the lowest temperature at which the condition of the patient will allow it to be safely inhaled. We have no new measures to propose; but we do think, that by more clearly specifying than has heretofore been thought possible, the *rationale* of those which experience has demonstrated the value, we may promote their employment, not only with greater positiveness and consistency, on the part of the profession, than has yet been manifested by the majority of them, but also to a far wider extent than that to which they have hitherto been carried out.

### Art. 3.—*On the Action of Ozone on Miasmata.* By M. Schönbein.

(*Medico-Chir. Rev.*, July 1852, from *Archiv des Sciences* (*Genève*), tom. xviii.)

M. Schonbein's additional researches have still further developed the

analogy of this substance to chlorine, and leave no doubt of the injurious effects it may exert on the respiratory organs when in excess. Mice soon perish in an atmosphere containing $\frac{1}{6000}$. The quantity which prevails in the atmosphere is very variable, being proportionate to the amount of electricity, and therefore at its maximum in winter, and its minimum in summer. It is, however, highly probable that, when existing only in minute quantities, it exerts a purifying effect on the atmosphere by destroying various deleterious miasmata. There are a great number of inorganic gaseous bodies, which, when diffused in scarcely appreciable quantities, yet render the air irrespirable—such as the gaseous compounds of hydrogen with selenium, sulphur, phosphorus, and arsenic—gases characterised by the facility with which they become oxidised. Ozone belongs to a class of bodies which, as agents of oxidation, rapidly destroy these hydrogenous compounds. An incessant source of miasmata exists in the variety of gaseous compounds which are incessantly liberated by the decomposition of the innumerable masses of organic beings which perish on the surface of our globe. Although the composition of most of these is unknown, it is to be supposed that their accumulation would render the air unfit for respiration. Nature has, however, provided the means of destroying such deleterious compounds as fast as they are generated, for M. Schönbein regards ozone, which is so constantly generated under electrical influence, and is so powerful an agent of oxidation, even at ordinary temperature, as specially destined to that end. His experiments prove that air containing $\frac{1}{5000}$ of azone can disinfect 540 times its volume of air produced from highly putrid meat; or that air containing $\frac{1}{3240000}$ of ozone can disinfect an equal volume of air so corrupted. Such experiments show how little appreciable by weight miasmata may be, which are yet sensible to the smell, and how small is the proportion of ozone necessary for the destruction of all the miasmata produced by the putrefaction of organic matter, and diffused in the atmosphere.

We may admit that the electrical discharges which occur incessantly in different parts of the atmosphere, and determine there the formation of ozone, purify the air by ridding it of oxidisable miasmata. At the same time that these are destroyed by ozone, the organic miasmata cause its own disappearance, and prevent dangerous accumulation of it. The opinion that storms purify the air may not be without foundation, as a large quantity of ozone is then produced. In the author's experiments, he has always found a large proportion of ozone in the vicinity of the stormy clouds on the Jura; and air ozonised by phosphorus, for experiment, gives forth a similar smell to that perceived amidst storms in mountainous regions. It is very probable that, in certain localities, the balance between the ozone and the miasmata does not prevail, and disease may be the consequence. As a general rule, however, numerous experiments have shown that the air contains free ozone (though in very different proportions), so that no free oxidizable miasmata can there exist. M Schönbein recommends that the atmosphere should be tested for ozone, in localities and at periods where fevers and other forms of disease prevail, so that the results of accumulated observations may be obtained.

ART. 4.—*Some Particulars from the Registrar-General's Report.*—A "Leader" in the 'Times.'

(The *Times*, Feb. 1, 1853.)

The Quarterly return of the Registrar-General is acquiring an ominous importance in the public eye. Perhaps the time is not far distant when we shall watch the fluctuations of Mr. Farr's figures as Egyptians watch the rise of the Nile. The prosperity of the kingdom may be denoted in a few years by the conclusions of this simple table. At present, so steadily does the country thrive under the influence of Free Trade and plenty, that even the unprecedented tide of Emigration still on the flow has not succeeded, according to Mr. Farr's estimate, in quite turning the tables against the population of this island. The balance, however, even thus limited, is exceedingly small, and there is so much room for error that confidence is wholly out of the question. The exact number of births in the last quarter was 152,066, and of the deaths 99,946, showing a natural increase of 52,120, or something above 200,000 a-year. On the other hand, during these 13 weeks there left this country for homes beyond sea, from the ports of London, Plymouth, and Liverpool alone, 55,315 emigrants, and the gross emigration of the year, as recorded by the agents intrusted with these returns, exhibits no fewer than 350,647 departures. Taking into account the numbers which must escape registration, it is evidently not unreasonable to compute the efflux of population at 1000 a-day all the year through; but, as Ireland is known to contribute far more than its proportion, Mr. Farr thinks it "probable, taking all circumstances into account, that the emigration from England is, at present, not equal to its natural increase."

This guarded and hesitating assurance is really all that we can obtain in the face of even unparalleled prosperity. Never did Mr. Farr's barometer rise so buoyantly as in this last return. Both the marriages and the births greatly, and in nearly equal proportions, exceed the average numbers of the season. The births have risen throughout the whole of last year from an average annual rate of less than 1 in 30 to 1 in 29. As to the marriages—those infallible indications of national well-doing—Mr. Farr seems quite puzzled to explain the extraordinary ascent of his own figures. In one district which has highly distinguished itself, he parenthetically observes "a railway has been recently carried here," though a malicious critic might perpaps look rather to the deaths than the marriages for the operation of this novelty. Nor is the upward tendency of matrimonial statistics at all confined to manufacturing neighbourhoods. On the contrary, it was remarkable in Essex, Suffolk, and Norfolk, and "particularly conspicuous" in Devonshire and Somersetshire, whereas in Manchester and Liverpool marriages have been actually rather on the decline—perhaps because the people were all married out. In London the pace maintained is wonderful—30 per cent. at least above what it used to be five years ago. Some readers may perhaps be interested in another feature of these statistical returns. It appears that whereas upwards of 12,000 "churches or chapels" were selected for the performance of the marriage ceremony,

the "places of worship unconnected with the Established Church," and so employed, were only 3342, while 624 "superintendents' offices" were put in requisition for the same purpose.

In the computation of deaths an excess, though a slight one only, is observable over the corresponding quarters of previous years; but we are not without an impression that even this return, if correctly understood, would be found really in our favour. We believe the truth to be that the season, partly from excessive wet and partly from atmospheric causes less ascertainable, has been seriously unhealthy, and that if the like conditions had supervened upon such a state of the population as existed ten years ago we should have witnessed a very alarming mortality. As it is, abundant employment, good wages, and cheap bread have so mitigated the effects of the season that the deaths, as the return specifies, are only slightly in excess. Fever has prevailed extensively, and even severely, the type being nearly similar everywhere, and the localities affected being, as usual, damp, undrained grounds, with crowded, unventilated dwellings. Considering the exposure of Southampton to the importation of tropical epidemics, the reader may be curious, perhaps, to learn the actual state of things in that town. The deaths there were for October 70, November 60, and December 101, showing undoubtedly a large increase in the latter month. Half the whole mortality, however, was due to diseases of the throat and lungs—a fact pointing clearly to English, and not West Indian influences. Of deaths from fever there were registered in October 5, in November 6, and in December 8, and of these one only is imputed to "supposed yellow fever," being the case of the engineer from the La Plata steamer. Obviously, therefore, there has been no propagation of this epidemic in England.

We obtain from the return before us the usual evidence, now almost superfluous, of the close and direct connection between cleanliness and health. Wherever low fever, or typhus, or scarlatina is marked as prevailing with any peculiar virulence, we may anticipate with the utmost certainty that the place will be presently described as destitute of sewerage, covered with ill-built tenements, and crowded with a wretched population. Sight and smell can detect these fever beds as infallibly as medical visitation; it is perfectly well known where disease has always existed, and where, under any special conditions of aggravation, it is sure to be found. Good water-works, effective drainage, and a few model lodging-houses, coupled with brisk trade and cheap provision, are seen to effect an instantaneous diminution in the rate of local mortality. It really seems as if the circumstances of situation or season, which we have been accustomed to think of some importance, were almost immaterial compared with those under our own control. High-lying lands, gravelly soils, pure air, heat or cold, rain or drought, are rarely quoted of themselves as influencing the sanitary returns of a district. The reference is always to the drainage of the ground and houses, the cleanliness of the lanes and alleys, the arrangement of the dwellings, the rate of work and wages, and the general well-being of the population. There is no place in England which cannot, with proper care, be made a wholesome residence. Meantime we must do our best in promoting the improvement. The usual number of towns

we see are "posted" in the official return for their irreclaimable filthiness. From one place the drains are reported as so small that, as the registrar indignantly declares, "a full-grown rat could not run through them upright."

The price of provisions, a subject also coming under Mr. Farr's notice, has materially increased since last year. We are favoured, in the return before us, with the "average prices of Consols, wheat, meat, and potatoes in each of the six quarters ending the 31st of December last." Perhaps the mention of the last item may provoke some surprise; but we took occasion, we remember, some few months ago to observe, from a medical report, that the potato had been an underrated plant. "Neither by bread nor by meat," says Mr. Farr, "can this vegetable be replaced in the dietary of the people." It is therefore by no means satisfactory to find that this precious esculent is 50 per cent. dearer just now than it was last Christmas. "York Regents" were procurable in December, 1851, at a mean price of 70*s.* per ton, whereas the quotation is now 105*s.* Mutton, too, has risen from $4\frac{3}{4}d.$ to $5\frac{1}{4}d.$, and wheat from 36*s.* 7*d.* to 40*s.* 5*d.*; but beef remains at its former prices. On the whole, however, the increase has not, as yet, been sufficient to fall with any severity upon a population in receipt of good earnings and constant employment, nor does there seem much probability that labour in this country will ever again be so cheap, or food so dear, that a fair day's work will fail of producing a fair day's wage.

## Art 5.—*On the Treatment of Fever by large doses of Sulphate of Quinine at St. George's Hospital.*

By (1) A. White Barclay, m.d.; and (2) Dr. Dundas.

(*Medical Times and Gazette*, Jan. 8 and 29, 1853.)

The cases treated by quinine, writes Dr. Barclay, may be divided into three classes.—1. Those in which its exhibition was followed by marked depression. 2. Those in which the pulse became slower, without general prostration or sickness. 3. Those in which no decided effect was produced which could be noted at the time.

1. Including all the cases together in which this effect was produced, the number is five. Two have been already mentioned as fatal, one of apparent typhus, one of tubercular inflammation of the brain, to which a third may be added, complicated with albuminuria, which was not detected until the subsidence of the fever, and ultimately proving fatal. The physiological effect of the remedy was produced by very different quantities in different instances, and given at very varying intervals. One patient took twenty grains every three hours for nine times; another took ten grains every two hours for ten times; while a third took twenty grains every six hours for only three times; the other two had twenty grains every four and every six hours respectively for eight times.

Of the 3 uncomplicated cases, 1 died, 1 was ill ten days before admission, and remained under treatment forty-five days before recovery was complete; the other had been ill a week, and was discharged cured at the end of twenty-four days.

2. In 2 instances only did the pulse become remarkably slower without any

depression; one took ten grains every three hours, the other fifteen grains every four hours for about two days, after which the dose was gradually diminished. The first had been ill five days, and was discharged cured in eleven days, having been kept under observation longer than was perhaps absolutely needed to ascertain that recovery was really complete; the second had been ill only two days, and got well in three weeks.

The first case was not severe and had no spots; the second was delirious for the first two or three nights, and had a faint rather indistinct rash on the abdomen; he had also pretty severe diarrhœa, but no evidence of ulceration of the bowels. The pulse fell in each below 50, but it is necessary to state here, that in another instance it fell still lower in which no quinine was given. He made a very rapid recovery, being ill only five days before admission, and leaving the hospital cured in eight days.

3. In 11 cases there was no distinct physiological effect produced by the quinine; and it remains to inquire whether recovery was more rapid under this mode of treatment than any other; and this may be best accomplished by instituting a comparison between them and the whole of the other fever patients admitted during the same time. Twelve examples of a very mild form, which might be justly called febricula, are omitted, and there then remain 51 instances of well-marked fever which were not treated by quinine.

Among these, 20 exhibited fever spots on the chest or abdomen, and 6 with and 5 without spots gave unequivocal evidence of ulceration of the bowels. By this is not meant merely the occurrence of thin watery motions, which have been observed in the majority of the patients, but the persistence of diarrhœa, with a patchy, shining, or fissured tongue. We have, therefore, as the basis of our analysis, 26 cases which neither had fever spots nor distinct evidence of ulceration, 14 with spots but not certain ulceration, and 11 in which the presumptive evidence of ulceration was strong.

The average duration of these cases, was—of the 26 cases, 10 days before admission and 21 days under treatment; of the 14 cases 8 days before admission, and 22 under treatment; of the 11 cases, 7 days before admission, and 33 under treatment.

Turning now to those in which the quinine treatment was adopted, and almost invariably in ten grain doses every four hours, they include 5 cases in which there was pretty conclusive evidence of ulceration of the bowels, 3 of which were also spotted; 4 cases with spots, where ulceration was not proved, and only 2 in which neither condition was exhibited. With the last cases it may be best to classify the two already referred to under the second division, because they are not marked by any very broad line of distinction separating them from the present series, and they exhibit the quinine treatment under its most favorable view.

There are, therefore, 4 cases without spots or decided ulceration, of which the average duration was eight days before admission, and twenty-three under treatment; 4 cases with spots only, of which the average duration was ten days before admission, and twenty-six under treatment; 5 cases with ulcerated bowels, of which 3 had also spots, and their average is fifteen days before admission, thirty-seven under treatment.

I must here distinctly state, that when I commenced this report I had no idea what the result would be, and, so far from believing it unfavorable, had hoped that excluding some unfortunate cases, the treatment of fever with quinine would prove rather more speedy, safe, and effectual, than by the ordinary modes. I am sorry to be convinced that it has no advantages.

It may be well to state in conclusion, that the prevalent type of fever has been what would be called "typhoid," not true "typhus." One or two had

the aspect of congestive typhus, but wanted the purple, mottled rash. One patient had this rash very well marked, mixed with ecchymosed spots, at the same time had distinct ulceration of the bowels, with a chapped and glazed tongue. Some had a very abundant crop of florid, slightly-elevated spots disappearing on pressure; some had only one or two of this character. Occasionally the spots are characterised as large, sometimes as small; and individual instances occur exhibiting various degrees of persistency, and various shades of colour, from a pale rose to a deep crimson. Spots existed without ulceration, and ulceration without spots, apparently without any definite rule; and some of the most severe and tedious cases were unaccompanied by either one or the other.

4. [In commenting upon these remarks, Dr. Dundas thinks] that, instead of contravening, they go far to substantiate the doctrine in question,—at least in so far as relates to the two only cases of fever in which "cinchonism" appears to have been *early* adopted. As regards the cases with "ulceration of the bowels," who expects, or who ever proposes, to *cure* such cases by cinchonism? I well know that cinchonism will not *arrest* such complications; but I equally well know that, resorted to in time, it will commonly prevent them.

Of three fatal cases in which cinchonism was resorted to, (though I cannot clearly make out if they are included in Dr. Barclay's Analysis,) one was "*apparent* typhus;" another "tubercular inflammation of the brain," and the third was "complicated with albuminuria," (nephritis?) Surely none of these cases can be adduced as affording any evidence on the present question.

It would seem that, in some of the cases, purgatives had been administered; these, in my experience, prove almost invariably hurtful in fever. Were emetics given? The amount of support and stimulants,—another important consideration,—afforded to the patients under quinine does not appear.

Dr. Barclay admits the effect of cinchonism to be "something strange,"—that is, new to him; but, "in one or two cases which got well very speedily under its employment," he questions "special effect:" or, "if any," that such effect "was limited to lowering the general circulation;" that "when pushed to its full extent," it prostrates "the vital powers." On these points my experience is totally at variance with that of Dr. Barclay.

I have myself administered quinine to cinchonism in many hundred cases, and seen it largely given by others; yet in no one instance have I ever observed it cause "prostration of the vital powers, "though often vomiting.

That the physiological effect of the remedy is not, as Dr. Barclay avows, "limited to lowering the general circulation," is proved by the fact, that commonly the general symptoms improve, not only *pari passu* with the change in the circulation, but that sometimes one, sometimes another, and occasionally *all*, of the following changes will occur; namely, the tongue will become moist, and the thirst abated, the skin cooler, and the headache and general uneasiness diminished, *before* any decided change in the frequency or character of the pulse can be detected. Also, in the more favorable cases, the physiological effect of the remedy is displayed solely in the rapid and *simultaneous* subsidence of all the urgent symptoms; there will be no tinnitus aurium, no headache, no dizziness, no deafness, and no vomiting.

The perusal of Dr. Barclay's interesting paper, as well as what I constantly hear and witness, proves to me the necessity of once more placing briefly before the profession some of those points in the treatment of continued fever by cinchonism on which I have already urgently insisted—orally, and in my several publications,—during the last three years. As these points are in nothing modified by subsequent experience, I shall give the precise words in which I originally stated them, under the impression that this mode of recalling

the subject may be more advantageous than any new or more lengthened statement:—

"I would here beg to recall, briefly, a few of those principles on which I have elsewhere strongly insisted, namely, that the value of cinchonism in typhus will be in proportion to its early induction; that, adopted early, it arrests with certainty, in the vast majority of cases, the course of all continued fevers, and thus presents the complications which prolong the disease and peril life; that we cannot arrest all cases of typhous fever by cinchonism, nor can we all cases of ague; serious visceral disease, in either case, will interrupt the specific power of the remedy; also idiosyncracy in some, and a broken-down state of the constitution in others, will prevent its success; that a vital organ already seriously damaged, or the vital fluids already seriously vitiated, will necessarily render the success of cinchonism doubtful; but that in none of the foregoing conditions, idiosyncracy excepted, should the remedy be altogether suspended, for, even in these, its administration will prove commonly useful, and *always* safe; that after the first impression has been made on the disease by cinchonism, the patient should be constantly and *well supported:* no slops. Wine will be often necessary, and (especially with hospital patients) brandy. To the purely medical measures I need not refer, but there is one point on which I am anxious to fix the attention of the profession, namely, that in estimating the specific power of cinchonism over typhous fever the practitioner *must carefully distinguish those cases of visceral disease, attended with low inflammation and typhoid symptoms*, which are continually admitted into hospitals as 'typhus,' or 'typhoid' fevers. In these cases the failure of cinchonism attaches, not to the remedy, but to the physician."—(Appendix, p. 61.)

I may, perhaps, be permitted to add, that the dose I first adopted, namely, 10 or 12 grains every two hours to an adult, is that which I still find to be the most uniformly advantageous, and attended with the fewest inconveniences to the patient.

## Art. 6.—*The Communicability of Cholera to Animals.*

By Mr. Marshall, Assistant Surgeon to University College Hospital.

(*Medico-Chir. Rev.*, April 1853.)

In this paper the particulars of a number of experiments are related, in which attempts were made to produce cholera in dogs and cats by inoculating them with the blood of cholera-patients, or by causing them to swallow the alimentary discharges of such patients, and the results, so far as they went, are stated to have been doubtful. The inoculations, indeed, failed altogether, and the other experiments, though they gave rise to choleraic symptoms, were not conclusive, for the alimentary secretions of certain other patients gave rise to like effects. These doubtful results, indeed, were to be expected, seeing how great an obscurity rests upon the question of cholera-contagion in man, for the *à priori* probability was, and is, that this obscurity would be still greater in brutes, whose life is less artifical, and therefore, less subject to disease, than the life of man. One thing, however, is quite clear, namely, that epidemic scourges have been accompanied by corresponding, if not absolutely similar, diseases, among brutes, and, by blights in vegetation; and, that the domestic animals are more prone than wild animals to such scourges.

Whether or not actual and true cholera is one of these scourges, the following facts will help us to decide:—

"No instances, as far as we know," proceeds Mr. Marshall, "have been met with, either in cattle, sheep, or pigs. From November to March, 1831-32, as recorded by Mr. Dick,* seven horses died, one after another, at long intervals, in from three to five hours, having had violent watery purging, followed by coldness of the mouth, lips, tongue, ears, and legs. The blood became thick and *treacly;* the intestines, after death, contained a whitish slime. In August, 1833, a zebra, in the Zoological Gardens, Regent's Park,† died in five hours, after copious whey-like purging of a yellowish tinge, great prostration, and coldness of mouth, muzzle, and limbs. On venesection, the blood proved thick and treacly. Intestines contained a similar whey-like fluid; blood black; urinary bladder not mentioned. In September, 1834, near Huntingdon,‡ a mare died after copious watery purging, much collapse, coldness, oppression of breathing, and suppression of urine. Two hours after the attack began, three quarts of thick blood were drawn. Sixteen hours after, the blood was too thick to run; the pulse quite imperceptible, the tongue and lips blue, and cramps came on. Post-mortem examination very imperfectly made. The editor of the 'Veterinarian' ventures to name the disease cholera, on the ground of its identity in many of the symptoms with the Asiatic form of that malady. In the harbour of Oporto, it is reported by Mr. Lardner, M.R.C.S.,§ that a racoon, removed perfectly well from a healthy ship to another alongside, in which cholera was raging, and of which the hold was very foul, was seized, after a few hours, with vomiting and cramps, and died. In October, 1847, a horse is said to have d ed in twenty-four hours, of excessive watery purging; it had coldness and spasms, and the blood was tar-like.‖ Two other similar cases, though not fatal, are recorded by Mr. Cherry.¶ It is stated by Dr. Schmidt, that he never knew, or heard from others, of the dogs or cats of families sick with cholera, being affected with the symptoms of that disease; and we believe that common experience in this country would coincide with that statement. But a very interesting account is given by Mr. Bevan, M.R.C.S., of St. Ives, Cornwall,** of a dog belonging to a poor woman, which, on the 14th of September, 1849, cholera then prevailing, was 'seized with sudden vomiting and purging. In a few hours the alvine evacuations as well as the fluid ejected from the stomach assumed the *rice-water* character of cholera discharges; all the visible mucous surfaces assumed quite a leaden hue; the dog died the next day, violently cramped, after twenty-four hours' illness. The woman wrapped the dog in flannel and kept him on her lap, and also put him in a bath. On the 16th, at 3 A.M., the woman herself was taken ill; by 7 A.M. was in a state of collapse; and at 4 A.M. of the 18th she died, having [as the writer states, we must remark,] contracted the disease from her canine companion.'

* * * * * * * *

"After voluntarily eating the fluid dejections of cholera-patients, both dogs and cats were observed, in several parts of Gallicia, during the first epidemic, to die with choleraic symptoms.†† In some cases, however, no harm resulted therefrom; and Schmidt also observes, that it is common to find dogs eating with impunity the vomits of their sick masters.‡‡ Four cases, to which we

* Veterinarian, 1838, p. 144.
† Youatt: Veterinarian, 1834, p. 427.
‡ Mr. Ball: op. cit., 1834, p. 548.
§ Lancet, 1833, vol. ii, p. 301.
‖ Lancet, 1849, vol. i, p. 267.
¶ Veterinarian, 1849, p. 533.
** Op. cit., 1849, p. 661.
†† Sup. cit.

‡‡ We do not remember to have heard of dogs eating the evacuations in this country. May we assume this to be owing to the better fed condition of the dogs, and to the different habits of the people, as compared with those observed on the continent, and in India?

have already had to refer, may here be more particularly related. Lieut. K.'s dog, after eating a large quantity of the cholera-discharges evacuated by his master, died with symptoms and post-mortem appearances quite resembling those of cholera in man. The case recorded by Otto of Breslau, is one in which a dog is said to have followed his master into the hospital, ate of the vomit, taken cholera, and died. The facts of Dr. Meyer's case are these: about four o'clock in the morning, the master discharged, per anum, a fluid resembling chamomile tea, of which the dog, previously quite well, soon after partook twice; the dog then lay under the bed until two o'clock P.M., when his master died. Hereupon the dog smelt his master all over, and was afterwards—*i. e.*, about ten hours after swallowing the dejections—seized with a vomiting of a whitish fluid, and purging of a highly-offensive thin mass. He moaned feebly, lay with his paws out stiff, and died at night. At the post-mortem next day, a perfectly *rice-water fluid* escaped in quantity from his mouth, and also from the stomach, when it was opened. There was injection, both venous and arterial, of the peritoneal coat of the intestines; flocculent whitish matter covered the mucous surface, which exhibited a fine redness throughout from stomach to rectum. Peyer's patches were injected; many of the gland-capsules turgid and white. In the cæcum and rectum the fæces were greyish-green; mucous coat also injected. Heart and veins contained blackish blood, entirely like that of human cholera-blood. State of the bladder not mentioned. In the fourth case related by Dr. Sylvain de Barbe, a dog entered the house of a cholera-patient, and licked up the vomited matters which were near the bed. Two days after, it became depressed after vomiting and purging, uttered cries, became stiff and cold, and died in forty-eight hours Its young mistress, seventeen years of age, who had given it drink, had embraced it, and was licked on the face (perhaps on the mouth) by the animal, had cholera two days after, and died in eight hours."

## ART. 7.—*A Practical Sketch of the Asiatic Cholera of* 1848 *in an English Village.* By G. F. STATHAM.

(*Pamphlet*, pp. 62, Taylor and Walton.)

The results of Mr. Statham's inquiry are stated in the following paragraphs:

From the foregoing data, the following conclusions seem to me to be justifiable:—that the Asiatic Cholera of 1848, in Chesham, was neither epidemic nor endemic; was therefore—and was with moral certainty, judging from the circumstances of its diffusion—infectious; that natural depressing agents alone accounted for those individuals being attacked, who were so; that the disease corresponds in every particular to an erysipelatous inflammation of the intestinal mucous membrane, due to a peculiar poison, which may be considered to be of the class of low inflammatory poisons, and, by its intensity, analogous to and ranking with the separate sub-class or division of erysipelatous inflammations, perhaps able—or by its degeneration able—to set up the ordinary forms of these inflammations, but requiring its own unaltered poison for the production of itself.

Its course and severity corresponds to that of purulent peritonitis, so also its effused fluid, modified by the surface yielding the same. Comparison of the effusion with that of the effusion of tracheitis; diphtheritic inflammations; in the blebs of erysipelas; from blisters; in water-brash; with hydragogue purgatives; in simple diarrhœa, &c. &c., fully accounts for the

peculiarities of the rice-water stools. It must be remembered that all loss of the thinner portion of the blood in cholera, by rendering the circulation through the capillaries of the liver and lungs more difficult, reacts upon itself, and by increasing the congestion of the portal system materially aids the inflammatory effusion from the mucous surface.

Believing that it is unphilosophical to seek for far-fetched explanations of simple facts, the above proofs towards cholera being an erysipelatous entero-colitis are given, not as being similar to the cutting of the Gordian knot, but merely as assisting to untie it, by using the proper means to loosen the right nooses; it were possible to draw the folds tighter by employing any other than the only right method of investigation.

It seems to me that in all probability the cholera poison likewise was the cause of the many diarrhœas in man and beast; probably by exciting local changes, or possibly by inducing changes in the blood generally. Now, seeing that the mere symptoms in the *course* of cholera alter the blood so materially, if cholera *be due* to an altered state of the blood, it seems to me that the way to discover these changes would be by examining the blood of patients attacked with diarrhœa, faintness, colic, &c. &c., *during* the cholera time, and in an infected place.

I cannot very well conceive the blood *filtering through* the mucous membrane in only one portion of its extent, and believe that in all diarrhœas either determination, congestion, or inflammation of the mucous membrane actually occurs, and that this change of the blood-vessels is the cause of the symptoms. I should expect that in *diarrhœas* during the cholera, the pathological changes may be those of mere reaction to the poison; perhaps in choleroid diarrhœa there is commencing inflammation, and in algide cholera extended inflammation, affecting perhaps two thirds or more of the whole intestinal track.

It seems probable that the cases entered in the parish book as cholera, in which algide symptoms were not marked, were cases where the peculiar action causing algide depression had been present, but had quickly ceased, and those symptoms due to the altered state of the blood supervened.

## Art. 8.—*On the Modus Operandi of Mercury in the Cure of Asiatic Cholera.* By Mr. Taylor.

(*Medical Times and Gazette*, March 19, 1853.)

The author, after giving a brief sketch of the history and progress of the disease from the shores of India towards Europe, proceeded to prove its communicability by human intercourse; and, while admitting the epidemic origin of cholera, he argued from illustrative cases that it was from the living and not from the dead body that the source of propagation was derived, and that the alimentary canal afforded the materials; that the materies morbi, by accidentally contaminating food or drink, became conveyed into the stomach and bowels, and formed the primary cause of the attack; that the excessive purging and vomiting consisted of the serous portion of the blood; and that this drain to the system was sufficient to account for all the consequent general symptoms. The author insisted, that there was no evidence of a blood poison until the symptoms of collapse had been fully developed, when the function of the kidneys had ceased, and the effete matters, being no longer eliminated, were retained and

absorbed, and the blood poisoned thereby; and fever, with coma, were the consequences. Of the pathological condition, as verified by dissection, the author differed from most preceding writers with regard to congestion or inflammation, which latter he considered to be the result of gravitation of the red particles of the blood after the loss of the serum. This treatment was founded on what he considered an established fact, viz., that dysentery was antagonistic to cholera; he recommended the exhibition of the chloride of mercury, in doses of one grain every ten minutes, according to the method of Dr. Ayre, of Hull, with the bichloride as an injection three or four times a day, in the proportion of one grain to eight ounces of distilled water, until a mucous or dysenteric stool is produced, which he denominated the "mercurial stool." This condition, indicative of subacute muco-enteritis, having been established, acts as a barrier to the further discharge of serum, and thus arrests the disease. The author also pointed out that period of the disease in which the exhibition of opium was most proper and beneficial, and which he limited to the early stage, before the hands and feet had become of a mahogany or blue colour, and before the collapse had set in; and concluded by noticing the remarkable success which had attended the mercurial plan of treatment in his practice.

### Art. 9.—*On a means of arresting instantaneously Cholera Cramps in the Limbs.* By M. Guyon.

(*Nouvelle Encyclogr.*, Oct. 1852.)

In a recent communication to the Académie des Sciences at Paris, M. Guyon states that these spasms may be immediately arrested by firm and steady extension of the cramped muscles. In the case of the leg he directs the heel to be held in one hand and the foot bent towards the shin; in that of the arm the fingers are to be straightened, and the hand carried towards the dorsum of the wrist.

### Art. 10.—*On an Epidemic "Suette Miliare" in the Herault.* By Dr. Swaine.

(*Lancet*, Nov. 20, 1852.)

"Suette Miliare" is an epidemic fever of a remittent type and a typhoid form, attended by profuse sweating, and for the most part with an extensive eruption of miliary vesicles. Dr. Swaine stated that he believed that the disease, in its present form, had been known on the continent before the commencement of the eighteenth century, and accurately described by Bellot during the fourth decennium of last century. It had recurred, from time to time, in various parts of France, always selecting damp, poverty-stricken, and ill-drained localities for its visitation. In 1821, the centre of France became a prey to its ravages, and that patient and acute observer, M. Rayer, was then commissioned by his government to investigate and report upon the disease. This report was most comprehensive and most welcome. Unfortunately,

however, it appeared under the banner of Broussais-ism, which deprives it of a portion of its value at the present day. It was not until 1851, that the Hérault became visited with this pestilence. It first broke out in a village situate on the declivity of a hill, sheltered by mountains, more or less elevated, from all but the south wind, which reaches it with the malaria of a marsh district on its wings. The village is dirty and viciously drained, the refuse of many small distilleries contributing to its insalubrity. The inhabitants are poor and prejudiced. Here the disease appeared spontaneously in the early spring. Many were attacked, and a few died. To the east of this village rises a lofty volcanic plateau, twelve miles long and two broad. Over this range the disease seemed to make a leap, attacking, secondly, with great and deadly violence, a village lying at the other extremity of the plateau. Although without any regular order in its march, the epidemic afterwards attacked, in succession, all the villages and towns situated around the base of the said plateau (les Causses), and in fact seemed to confine itself almost entirely to one hydrographic basin, the bed of the river Hérault and of certain of its tributaries. No facts are recorded which render it very probable that the disease is propagated by contagion. It is, however, stated that it sometimes passed from village to village, in the teeth of the prevailing winds. The people, however, and even the rural practitioners, mostly believed in contagion, and it required nothing less than a scenic display on the part of a government commissioner to reassure the panic-stricken inhabitants of the affected district on this point. The ætiology of the disease remains obscure. A specific telluric influence must be supposed to be superadded to the general miasmatic tendency of the affected communes. The epidemic generally sets in in early spring, when the peasantry, male and female, are engaged in laborious field-work under a broiling sun, and often with a piercing wind blowing upon them from the snow mountains of the Cevennes; whilst the sweating method of treatment is at all times, and for the cure of nearly all diseases, carried to its utmost limits. The nature of the disease is, if possible, still more obscure. French physicians have uniformly applied the pathological theories current in their own day to the explanation of this disease. Dr. Swaine felt more inclined to adopt Prout's view of analogous fevers attended with profuse sweating—namely, that an excessive quantity of lactic acid is generated within the system and excreted by diaphoresis. The almost exclusively vegetable and milk diet of the peasantry in the Hérault, seems to Dr. Swaine to favour this assumption; and he thinks that in the so-termed malignant cases, the excess of lactic acid in the circulation may be so great as to overwhelm the nervous centres. An account is then given of the disease itself, which differs from other typhoid fevers chiefly in this, that an enormous amount of sour fluid is poured off from the skin, and that in many instances—not in all—a miliary eruption appears after a few days of these profuse sweats. It is important, however, to observe, that neither the fever nor the course of the disease is at all modified by this efflorescence. The distinction of two forms of the disease seems to Dr. Swaine simply convenient, but not founded in any real difference except in degree. Mild cases of the disease often become suddenly and very

unexpectedly malignant, and the patient dies comatose or convulsed, in spite of every variety of treatment. Other cases show this intensity from the first, and a few days, or even hours, decide them in a fatal sense. Post-mortem examinations throw no light upon these cases, beyond establishing plethora of the venous system, and a generally diffluent and black condition of the blood. In 1821, Rayer and others practised the antiphlogistic treatment to its full extent. At the present day, immense doses of quinine are given, larger in proportion as the disease is intense. The proportion of deaths seems to be pretty equal under these two opposite poles of indication, and it is hard to suppress a smile at the zeal and confidence with which such different methods are advocated by their respective adherents. Of the statistics of the Hérault epidemic little is as yet known. Dr. Swaine concluded his paper with a brief parallel between the suette miliaire of this and the last century, and the English sweating sickness of the middle ages. Dr. Swaine dissents from the opinion of Hecker, who regards the two diseases as essentially different, and himself considers that there is enough analogy between the two to justify us in classifying them together, admitting only that greater degree of intensity in the earlier disease which might well be accounted for by the differential character of the two races, of their respective habits and customs, and especially by the different age of civilisation under which the English sweating sickness occurred.

ART. 11.—*Analysis of the Cases of Scarlatina that occurred in James Donaldson's Hospital during the autumn of* 1852*; with some remarks on the present state of our knowledge of that disease.* By J. D. GILLESPIE, M.D., F.R.S.E.

(*Edin. Monthly Journal*, March 1853.)

The following remarks form the conclusions of a paper having the above title, which paper was read before the Edinburgh Medico-Chirurgical Society at the beginning of the present year :

I. Epidemic scarlatina, considered on an extensive scale, has a characteristic type, which changes at different periods, though all the varieties may possibly have illustrations during the same time, and in the same locality.

II. In some epidemics the morbid poison, instead of being thrown off by the ordinary outlet (transpiration through the skin), is apt to fall on the internal organs, and more especially the kidneys, causing congestion in these excreting bodies, and impairment of function, which, in some instances, may give rise to temporary albuminuria, either with or without dropsy.

III. Although it be admitted that a peculiarity of type may dispose to albuminuria and dropsy, the frequency of their occurrence may often be materially modified, or in those epidemics where no great liability to such affections exists, be even prevented, by careful endeavours to eliminate the poison in the first instance, and latterly by protection from exposures to cold or moisture.

IV. The primary and most important indication for treatment must therefore be, resorting to such measures as will most efficiently favour the natural efforts of the system to throw off the morbid poison by transpiration from the skin.

ART. 12.—*Furunculoid Epidemic: appearance of Acute Pemphigus.* By Dr. M'CORMACK.

(*Assoc. Med. Journ.*, Feb. 18.)

The epidemic of carbuncles is still raging in London, and has been more fatal during the last month than at any previous period, except in the month of September last year, in which were registered 10 deaths. In January, 1853, 9 deaths were registered, three of which occurred in the last week of the month. In one of these, the patient, a lady of 39, survived with a succession of carbuncles for five months, during the last five weeks of which they became complicated with whitlows and abscesses, under which she sank. In several instances, the disease has of late commenced with vesications; and it is also remarkable, that two or more deaths have recently occurred from *pemphigus*, which, in its acute form, is extremely rare in this country. In its malignant form it is a horrible disease, more dangerous than smallpox, and quite as repulsive and distressing. The type is low, and the serum in the vesicles speedily assumes a putrid condition, and exhibits a dark colour. The pulse is frequent and feeble, and the mucous membranes often participate in the disease, and discharge an offensive muco-purulent fluid.

ART. 13.—*On the Nature and Causes of "Mountain-Sickness," more especially as experienced among the higher Alps.* By S. T. SPEER, M.D.

(*Assoc. Med. Journ.*, Jan. 28, 1853.)

*Resumé.*—1st. That in mountainous districts, and upon attaining a certain elevation, a series of physiological phenomena manifest themselves, which differ widely from the standard of health, and exist as long only as the exciting causes are in activity; disappearing upon a return to the ordinary level of human habitation.

2d. That the discrepancy existing among travellers relative to these phenomena, is to be accounted for by their variability both in nature and degree; this variability being dependent upon conditions, referable on the one hand to the individual, and on the other to the locality.

3d. That, on the part of the individual, the following circumstances may modify the nature and intensity of the "mountain sickness:" idiosyncracy, previous condition of health, the habit of fatigue (especially that produced by ascents), and previous residence in a rarified atmosphere.

4th. That, as regards the locality, the phenomena in question are most strongly marked where a considerable elevation above the previous residence of the individual is attained in a short space of time; as on the Pass of the St. Bernard, the Col of the Mont Moro, and the Col de St. Theodule, in the Alps.

5th. That the mountain sickness is characterised by the following symptoms, the entire category of which, however, is seldom, if ever, united in one individual: vertigo, headache, somnolence, dyspnœa,

constriction of the chest, palpitation, syncopal tendency, occasional oozing of blood from mucous surfaces, increased rapidity of pulse, anorexia, nausea and vomiting, thirst, febrile tongue, muscular pains, sense of extreme debility in the lower limbs, with general prostration of strength.

6th. That these symptoms may be referred to a threefold source, viz., a gradually increasing congestion of the deeper portions of the circulatory apparatus, increased venosity of the blood, and loss of equilibrium between the pressure of the external air and that of the gases existing within the intestines.

7th. That these exciting causes of mountain sickness are themselves the result of a change from a given atmospheric pressure and temperature, for one in which both are greatly and suddenly diminished.

## Art. 14.—*Chloroform in Rheumatism.* By J. Kirby, ll.d., l.c.d., Ex-prof. of Physic in the College of Surgeons, Ireland.

(*Dublin Medical Press*, March 16, 1853.)

The following case is selected from some others of the same kind, as illustrating a kind of practice that we have seen carried out in several instances with marked benefit:—

On the 3d instant, I was called to visit Mrs. K—, who is about 40, mother of several children, and now six months advanced in pregnancy. At the commencement of last summer, she was affected with a scrofulous abscess above Poupart's ligament at the left side, which was opened and discharged matter in a large quantity peculiar to that disease. By a residence in the country, sea-bathing, a suitable exercise, and tonic remedies, the abscess grew less, and in time it cicatrized altogether. On her return to town, she again complained of abdominal uneasiness, the tumour formed anew, and it broke spontaneously, she in the meantime having no advice on the subject.

For the last fortnight, she has been confined to her bed, except when moved for purpose of convenience or comfort. She lies wholly on her right side, in consequence of pain induced whenever she turns on the left. During this time she had "scarcely any sleep." At night she suffers "most excruciating and constant pains in her loins, over the sacrum, the coccyx, and the hips. These pains compel her to loud exclamations of distress, disturbing the whole house by her vociferations, so that her husband and attendants make many complaints of the want of repose. The appetite is wholly gone. She takes whey and tea principally, and she loathes wine, porter, ale and beer. She sweats profusely at night; the bowels are regular; the urine scanty and lateritious; the pulse is very frequent and weak: she is much emaciated, and looks in fact like a person far advanced in hectic fever. The movements of her child are quick, lively and natural. The abscess discharges about a tablespoonful of rather healthy matter.

From the success which attended the administration of chloroform in other cases, I was induced to make trial of its remedial agency in the present instance, and I accordingly prescribed it in the following way:—

℞ Chloroform. min. octo.
Aquæ, ℥j;
Syrup. croci, ʒj;
Ft. haustus. Mitte tres haustus tales. St. unum quartis horis.

℞ Chloroform. drach. tres.
Aquæ unc. tres. M. Sig. for external use.

A sixth part of the mixture was desired to be sprinkled on a folded handkerchief and laid on the parts severely affected, and these to be covered with a large sheet of gutta percha paper to prevent evaporation. Visiting her the next day, I was agreeably surprised to learn from her that all her torments had wholly disappeared after she had taken the first draught, and that the others had procured a good night's sleep.

The first application of the mixture was awkwardly applied, and she said it gave her much pain, and therefore she would not permit it to be used again. In consequence of a good night, she had some appetite, and enjoyed a glass of Calcavella wine. Two chloroform draughts were to be taken at night if the pains returned.

The husband has informed me that she was moved to the sofa at four o'clock yesterday, where she remained till twelve, and slept, as she was free from uneasiness. On her return to her bed, she was seized violently in the back and hips, but these pains were much alleviated by the two chloroform draughts.

She was now ordered to remain in her bed, to have the local application made once, and to take two draughts at night unconditionally, and a mixture composed of infusion of roses, with dilute sulphuric acid, was ordered with a view to restrain the nightly perspiration, to which she attributes much of her debility.

To-day, the 7th of the month, she reports that she used no medicines, feeling that she required none ; however, she is mistaken, for her health is in a very precarious state in consequence of the discharge of matter from her groin and her pregnancy. To-day she goes two miles from town, and her case devolves on Dr. O'Brien, who met me in consultation, and who is to attend her in her confinement.

## Art. 15.—*Statistical Information respecting Tuberculosis.* By Dr. T. K. Chambers.

(*Medical Times and Gazette*, Dec. 1852.)

From a laborious examination of 2500 cases, of all kinds, recorded in the post-mortem books of St. George's Hospital, Dr. Chambers finds tubercle in no less than 25 per cent. of the cases examined, and in those of men much oftener than in those of women. "In every 100 men," he says, "there were more than 27, and in every 100 women not quite 22, affected with tuberculosis." Tubercle of the kidney is found to be much commoner than is supposed, and tubercle of the intestines to be almost exclusively confined to children. The liability to tuberculosis is said to be in direct relation to the degree of venosity in the part,—the very reverse of the doctrine put forward by Rokitansky.

## SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

### (A.) CONCERNING THE NERVOUS SYSTEM.

ART. 16.—*On the Proximate Cause of Insanity.* By Dr. DAVEY.

(*Medical Times and Gazette*, Feb. 5, 1853.)

After briefly adverting to the difficulties as well as the prejudices which have beset psychological studies, and, after alluding to the writings of Hobbes, Locke, and others, whose opinions, he said, were thrown pretty much in the shade by more recent investigators, viz., Priestly, Lawrence, and more particularly by Gall, the author proceeded to show that the doctine of the reality of the mind, so successfully taught during the last century by Haller and Bichat, had very properly given place to the more scientific because more truthful conclusions of Gall himself. "There are yet, I fear," said Dr. Davey, "many medical men who refuse to insanity a physical cause, and remain content to recognise this dreadful infliction as one of an immaterial or spiritual nature." Dr. Davey demonstrated at considerable length, "the various *post-mortem* appearances observed within the cranium of the lunatic, together with the importance attached by various eminent writers in this and other countries to each of them, and their several connections, with particular forms of mental disease;" and, having pointed out in the most conclusive manner the numberless contradictions and discrepancies to which Drs. Bayle, Calmeil, Foville, and others, had committed themselves, he presented for the inspection of the Society a series of tabular forms, designed to illustrate the facts disclosed on examination *post-mortem* of one hundred insane persons, who, he said, had died under his own care at the Hanwell Asylum, during the period when he held office at that establishment, viz., from 1840 to 1844 inclusive; and these "facts," he argued, were in themselves confirmatory and demonstrative of the erroneous impressions of the pathologists named above. These "tabular forms," Dr. Davey assured the Society, showed the practical results of his own investigations into the primary cause of insanity, carried on in the dead-house of the Hanwell Asylum, and were commenced and carried through without any preconceived views or theory in relation to this department of our profession. "If," said the author, "we will be at the trouble to observe what particular portion or portions of the brain and its investing membranes, &c., are found diseased, whether it be in the cases of mania, or dementia, or melancholia, complicated or not with either epilepsy or general paralysis, it will be seen that the appearances *post-mortem* are such, and so united the one with the other, whether of this or of that structure, that nothing definite can be made of them, regarded only as causes of mental derangement and its complications; *e.g.*, mania may be and is found with or without disorganisation of the membranes,—with or without effusion into the sac of the arachnoid,—with or without appreciable disintegration of the vesicular neurine or

grey matter,—with or without abnormal changes in the white or medulary matter; and similarly of dementia and of melancholia, and so of both the complications of mania and dementia with either epilepsy or general paralysis." The second part of Dr. Davey's paper, designed to reveal his own views on the subject, commenced with a brief exposition of the physiological uses of the brain, introduced with a view of rendering the succeeding pathological remarks the more easily understood. "The brain is that portion of our organism," observed Dr. Davey "by means of which the adaptation of man to the external world is in an especial manner made manifest. The external senses, ever on the alert, as good and trustworthy sentinels, supply to the brain an unceasing stream of knowledge of all the facts and circumstances which may surround us; and by means of these, and their relationship to the brain,—the central organ,—the affections of man are called into being, and his sympathies awakened; the emotions, also, are similarly excited to action, and the deep passions of our complicate nature aroused. Upon the integrity of the external senses man relies also for the stimuli necessary to the development and perfectibility of his intellectual powers. The cerebral mass itself is in every way adapted by its peculiar organism, to the performance of these wondrous offices in the animal economy, composed, as it is, of various and dissimilar parts, each one ministering in an especial manner to the mental entirety individual." After a rapid sketch of the physical properties of the cerebral mass, and its heterogeneous and complicate form, &c., regarded as a fair indication of the very peculiar and exalted functions it was called on to perform in the human economy, it was asserted that the peculiar power of the nervous system resides in the grey or cineritious portion, and that the office of the medullary is simply that of a conductor. Dr. Davey proceeded: "If the production of the nervous power in a state of health is due, as it undoubtedly is, to certain and oft-recurring physical changes taking place in the cerebral organism—and this the result of nothing more or less than the difference of both the organic and chemical properties which distinguish the grey and medullary substances respectively—it must follow that any cause calculated to interfere with such certain and physical changes, whether it operate by either increasing or diminishing their frequency, or altering their order of succession, must, if it exceed certain limits, lead to the secretion of a "nervous power" of so altered a quality or quantity as to induce disease—insanity; or, to go further, if the organic or chemical properties which distinguish either the grey or medullary substances become altered in any way, if the "fatty matter," or "osmazome," or "albumen," or "water," bore their legitimate or normal form of combination, or relative proportion, in either one or the other, or both of these structures, and were to assume another character, and present *en masse* a dissimilar colour or consistence, and so on, it must follow that the same physical changes must be materially and injuriously affected thereby; and if these occur to the grey matter,—which is, I think, more commonly the case, this being the source of power to the other parts of the brain,—then will one or more of the affective feelings or propensities, or of the intellectual powers, give evidence of deranged action, according to the location and extent of the convoluted

surface brought under the influence of the disease. The application of the facts and principles above insisted on to the every-day history of individual cases of insanity is alone necessary to verify the origin and seat of this dreadful malady." Dr. Davey believes, that in mental derangement the "nervous power" becomes converted into "morbid sensibility;" thus "long-continued mental exertion, protracted anxiety, or excessive action of any one or more of the cerebral faculties, lead ere long to a morbid susceptibility of a portion or portions of the cineritious neurine; this, the source of power, intellectual and emotional, if overtasked, loses like any ordinary muscle the capacity to respond duly to the too-frequent and long-continued calls made on it;" and hence is disease set up in this structure. Dr. Davey considers that insanity is proved to be a disorder of the nervous rather than of the vascular system, because of its frequency among the poor and half-starved in the lower classes, and not less by the general state of health of its victims in the middle and upper classes of society. All those appearances found on examination of the heads of insane persons Dr. Davey views in the light of effects rather than causes of disease. He quotes Dr. Billing as an authority to prove that disease commencing in the "nerve matter" ultimately involves the capillaries, and there becoming congested, inflammation and its consequent disorganisations may or may not succeed, according to the success or otherwise of the treatment pursued. After drawing a comparison between insanity and other disorders strictly called nervous, such as hysteria, chorea, &c., and showing, that in his judgment, it—that is, insanity—is more closely allied to these than is generally imagined, Dr. Davey remarked, the same principles of treatment should be recognised in all; that in insanity, as in chorea, tetanus, and so on, it was of the first importance to establish a normal action of the primæ viæ, thereby ensuring a healthy state of the secretions and excretions, both as regards quality and quantity, to counteract the debilitating influences of diseased action in the system by the use of tonic remedies, and in each one was it essential to be on the look out for any local inflammatory condition of particular parts. "In each and all of these affections," said Dr. Davey, "the adoption of that physical regime calculated to supply pure air to the lungs, appropriate food to the stomach, power to the muscular system, agreeable and varied occupation to the mental faculties, and tone to the perspiratory apparatus will be held as an essential element of treatment."

ART. 17.—*On some of the Vital Statistics of Insanity.* By GEORGE ROBINSON, M.D., Consulting Physician to the Dunston Lodge and Bensham Lunatic Asylums, Newcastle-on-Tyne.

(*Medical Times and Gazette*, Nov. 13, 1852.)

In 1844, the Metropolitan Commissioners in Lunacy published a statistical Appendix to their Report to the Lord Chancellor, containing returns to certain inquiries addressed by them to the proprietors and medical superintendents of the various asylums in England and Wales. From the facts thus supplied, some tables of great general

interest were prepared by the Commissioners, showing at a glance the total number of patients then confined, their sex, state as to probability of recovery, the number of epileptics, idiots, and homicidal lunatics, the previous condition and class of life of patients, &c. But the results most important in a medical point of view were not tabulated, probably from the incompleteness of the returns, and the consequent impossibility of converting them into tables possessed of the fulness and accuracy expected in an official document. As these important parts of the returns have not since, to my knowledge, been reduced into an accessible form, and as even an approximation to truth, based on the most extensive collection of facts hitherto obtainable, is certainly to be preferred either to blind guesses or vague comparisons with other countries, or even to the limited observations of a single asylum, I have attempted to construct from those returns some tabular conclusions which may not be altogether useless or uninteresting to persons engaged in the study or treatment of mental diseases.

### 1. Causes of Insanity.

Of 12,033 cases of insanity admitted into the asylums of England and Wales, and in which the causes were returned,—

An hereditary predisposition to insanity was traced in 2557 persons, or 21·24 per cent.

In 6509 cases, or 54·09 per cent. the disease was referred to moral causes, viz.—

| | |
|---|---|
| To Intemperance | 1792 |
| Vice | 549 |
| Poverty | 1129 |
| Grief | 1548 |
| Study | 376 |
| Religious excitement | 782 |
| Sudden fright | 199 |
| Other moral causes | 134 |
| | 6509 |

In 3358, or 27·90 per cent., insanity was ascribed to physical causes, viz.:—

| | |
|---|---|
| To Puerperal disease | 372 |
| Injuries to head | 274 |
| Metastasis | 55 |
| Various physical causes | 2657 |
| | 3358 |

In 2166, or 18 per cent., the cause was unknown.

Of the 6509 cases of insanity arising from moral causes:—

| | | | |
|---|---|---|---|
| 27·51 | per cent. | were ascribed to | intemperance. |
| 8·43 | ,, | ,, | vice. |
| 17·34 | ,, | ,, | poverty. |
| 23·78 | ,, | ,, | grief. |
| 5·77 | ,, | ,, | study. |
| 12·01 | ,, | ,, | religion. |
| 3·05 | ,, | ,, | fright. |
| 2·05 | ,, | ,, | various moral causes. |

Of the 3358 cases referred to physical causes (but many of which are indirectly traceable to the former class of agencies)—

11·07 per cent. were cases of puerperal mania.
8·15 „ arose from injuries to the head.
1·63 „ „ metastasis.
79·12 „ „ various constitutional and local diseases.

### 2. Forms of Insanity.

From the returns relative to the forms of insanity, as observed in the cases admitted into the asylums of England and Wales during the years immediately preceding 1844, it appears that, of 15,949 admissions—

941, or 5·90 per cent., were received in a state of acute mania, or raving madness.
4298, or 26·94 „ in a state of chronic mania, or ordinary madness, (conversation or conduct irrational and absurd.)
1020, or 6·39 „ were labouring under mania, but with intervals comparatively lucid.
1055, or 6·61 „ were suffering from mania, but the precise form was not mentioned.

(Making a total of 7314 cases of mania in its different forms, or 45·85 per cent. of the whole admissions.)

1096, or 6·87 per cent., were cases of dementia, arising from protracted mania.
988, or 6·19 „ exhibited dementia from other causes.

(Making a total from dementia of 2084, or 13·06 per cent. of the whole.)

2524, or 15·82 per cent., were cases of melancholia.
924, or 5·79 „ monomaniacs.
704, or 4·41 „ returned as cases of moral insanity.
230, or 1·44 „ congenital idiots.
353, or 2·21 „ imbecile from birth.
767, or 4·80 „ cases of general paralysis (paralysie des aliénés).
1049, or 6·57 „ epileptics.

### 3. Causes of Death in Insanity.

The following Table, arranged on the plan adopted by the Registrar-General, may serve to indicate the diseases most generally fatal among the insane, and thus indirectly cast some light upon the most prevalent forms of bodily disorder, accompanying mental derangement:—

#### Zymotic Diseases.

| | | | |
|---|---|---|---|
| Influenza | 16 | Scarlatina | 1 |
| Cholera | 13 | Dysentery and Diarrhœa | 166 |
| Fever | 55 | Purpura-Scorbutus | 2 |
| Erysipelas | 41 | | |
| Variola | 2 | | 296 |

#### Sporadic Diseases.—1. *Diseases of Uncertain Seat.*

| | | | |
|---|---|---|---|
| Hæmatemesis | 2 | Lumbar abscess | 8 |
| Hæmorrhage | 2 | Scrofula | 11 |
| Heneral Dropsy | 100 | Rachitis | 1 |
| Ascites | 8 | Marasmus | 70 |
| Fydrothorax | 31 | Rheumatic Gout | 1 |
| Abscess | 7 | Cancer | 14 |

| | | | |
|---|---|---|---|
| Cancer of Uterus | 5 | Fungoid Disease | 2 |
| „ of Stomach | 8 | Sudden Death | 1 |
| „ of Rectum | 1 | Inflammation (part not specified) | 2 |
| Mortification and Sloughing | 38 | | |
| Age and Debility | 266 | | |
| Gradual Decay | 331 | | |
| | | | 909 |

2. *Diseases of Nervous System.*

| | | | |
|---|---|---|---|
| Apoplexy | 354 | Meningitis, &c. | 60 |
| Diseased Brain, &c. | 349 | Delirium Tremens | 8 |
| Epilepsy | 457 | Nervous Concussion (?) | 1 |
| Paralysis | 459 | Dementia | 9 |
| Exhaustion | 281 | | |
| | | | 2045 |
| Water on Brain | 54 | | |
| Ramollissement | 13 | | |

3. *Diseases of Heart and Blood-vessels.*

| | |
|---|---|
| Disease of Heart | 67 |
| Pericarditis | 1 |
| | 68 |

4. *Diseases of Organs of Respiration.*

| | | | |
|---|---|---|---|
| Pneumonia | 29 | Disease of Thorax (nature not specified) | 39 |
| Asthma, &c. | 45 | | |
| Disease of Trachea | 4 | | |
| Phthisis | 525 | | |
| | | | 642 |

5. *Diseases of Organs of Digestion.*

| | | | |
|---|---|---|---|
| Peritonitis | 3 | Stricture of Œsophagus | 1 |
| Disease of Liver | 25 | Inflammation of Pharynx | 2 |
| Enteritis, &c. | 51 | Biliary Calculi | 1 |
| Disease of Abdomen (nature not specified) | 16 | | |
| | | | 108 |
| Intestinal Obstruction | 9 | | |

6. *Diseases of Urinary Organs.*

| | |
|---|---|
| Diabetes | 2 |
| Disease of Bladder | 9 |
| Calculus Vesicæ | 1 |
| | 12 |

7. *Diseases of Joints, &c.*

| | |
|---|---|
| Rheumatism | 2 |

EXTERNAL CAUSES OF DEATH, INJURIES, ACCIDENTS.

| | | | |
|---|---|---|---|
| Suicide | 29 | Asphyxia | 3 |
| Accidental Injury (self inflicted) | 2 | Intemperance | 2 |
| Found Dead in Bed | 3 | Inanition | 12 |
| Burns | 1 | Injuries from Lunatics | 2 |
| | | | 59 |
| Accidental Suffocation from Food | 5 | | |

Total causes of death specified . . . 4141

Of the above 4141 deaths in the asylums of England and Wales—

| | | | |
|---|---|---|---|
| 2045, or 49·38 | per cent., | were from | diseases of nervous system. |
| 296, or 7·14 | „ | „ | zymotic diseases. |
| 909, or 21·93 | „ | „ | sporadic diseases of uncertain seat. |
| 642, or 15.26 | „ | „ | diseases of the organs of respiration. |
| 108, or 2·60 | „ | „ | diseases of the organs of digestion. |

These results vary considerably at different asylums, and some particulars of these variations are given in the paper, but our space does not allow us to include any but the general facts.

ART 18.—*Opium in Irritable and Anæmic States of the Brain in Fever.* By HUMPHRY SANDWITH, M.D., Physician to the Hull General Infirmary, and Lecturer on the Practice of Medicine in the Hull School of Medicine.

(*Association Medical Journal*, Jan. 1, 1853.)

"THE employment of opiates in cerebral affections," says Dr. Holland,* "is a question of much interest and various difficulty;" and "there is great scope for further research on this subject, as on all that relates to disorders of the brain, and a strong presumption that opium is capable here of larger and more beneficial application than has yet been given to it." His subsequent remarks, in the same article 'On the Use of Opiates,' embrace, but are not restricted to, its use in fever, and may be consulted with advantage. Meanwhile, the profession owe Dr. Latham a large debt of gratitude for his masterly sketch of those irritable and anæmic states of the brain in fever, which demand the cautious use of this powerful narcotic. His brief but comprehensive paper on the subject, published twenty years ago,† is still a beacon to guide us in a path, which his observant genius first irradiated.

The class of cases of purely irritable states of the brain is to be discriminated, as Dr. Latham shows, less by any *series* of symptoms flowing from the brain, than from the *single* symptom of a state of protracted wakefulness. Nor is the wakefulness pathognomonic *per se*, but to warrant the use of opium, it must occur in combination with an irritable state of the nervous system, induced either by depressing moral agencies, or by the physically exhausting one of alcohol. The fever may be mild, and "exhibit a *sort of contrast* with the existing affection of the brain;" or it may correspond in severity with the sensorial disturbance up to a certain point, and then the symptoms referable to the brain outrun the febrile phenomena. In the latter case, though vascular over-action may have been kept in check by general or local bleeding, still the sensorial disturbance progresses. "As other symptoms are relieved, the delirium is even aggravated." We are thus presented with two forms of irritable brain in fever,—the one being marked by simple wakefulness with no other cerebral symptom, and the other by wakefulness coupled with symptoms of high sensorial excitement. Both varieties are "incident only to those, whose habits and mode of living have been calculated to do an abiding injury to the nervous system, and who have been long actually suffering from such injury."

The same acute observer, however, recognizes another variety of sensorial

* Holland's 'Medical Notes and Reflections,' p. 426, 1839.

† Dr. P. M. Latham on the Use of Opium in Fevers, in London Medical Gazette, vol. x, p. 10, 1832.

disturbance in fever, which is obviously associated with anæmia. We shall quote his words:

"Again, I have seen the sensorial affections incident to fever, which require opium for their cure, manifest themselves in another form. There has been high vascular action from the first; and *large depletion* has been required to subdue it and to guard particular organs, and especially the brain, from injury. Under such treatment, all has gone on successfully, and the patient has reached the point of convalescence, with a soft pulse, a cleaning tongue, no pain, and refreshing sleep for two or three days; when suddenly (the tongue, the pulse, and all other circumstances continuing the same) some strangeness of manner has arisen, and then the wildest delirium, and then the unrestrained passage of the evacuations. I have known the transition from such a state of *convalescence* to such a state of peril, take place in a few hours; and I have known the patient again brought back to a state of convalescence in twenty-four hours by a moderate dose of opium. This is a rare form of disease, but one in which, when it does occur, opium is eminently indicated."

Now here was an anæmic condition of the brain, but not to so frightful an extent as in the case to which I beg leave now to call the reader's attention; and I may add, that its very extent suggested, not "a moderate dose of opium," but the liberal use of the remedy.

Case.—Mrs. T., a rather delicate woman, about thirty years of age, fell into fever during the second week of November, 1848, when near the close of the third month of pregnancy. Her abode was in the vicinity of open and offensive ditches; and it was soon evident that the attack would prove severe. The case ran on nearly three weeks, with symptoms of grave and increasing disturbance of the sensorium, and other indications of low typhoid fever. By careful management, indeed, had she not been pregnant, the disease might probably have evinced no symptoms of more than usual danger. On the 2d day of December, the irritation of the great nervous centres palpably interfered with gestation, and abortion was the speedy consequence. The process unhappily was accompanied with a very profuse hæmorrhage, which ceased indeed with the expulsion of the fœtus and placenta, but which in twelve hours had brought the patient into imminent peril. Along with continued sensorial disturbance, there were the signs of incipient collapse, as manifested by a rapid and fluttering pulse, unequally diffused animal heat, and laborious respiration. Moderate stimulation by wine had been latterly allowed; but it now became necessary both to give ammonia, and augment the dose of alcohol. The extreme restlessness, subsultus, and other alarming symptoms demanded, however, a cordial, on which more reliance could be placed than even on the stimulus of brandy. Life, in short, was now in extreme peril. Calling to mind the marvellous examples of the virtues of opium in uterine hæmorrhage *without fever*, as recorded by Dr. Stuart in the *Medico-Chirurgical Transactions*,* as well as its power to sustain life in the fearful struggles of angina pectoris, and reasoning from the analogy of its virtues *in fever*, when the circulation is at the same time depressed by antimony, as also in delirium tremens, when excessive and habitual intoxication may be presumed to have exhausted the vital energies of the brain, I determined on an attempt to steady the heart, restore the capillary circulation, and calm the irritation of the nervous centres by a full dose of opium. Mr. Millin, the surgeon with whom I was attending in consultation, fully concurred with me in these views. We accordingly gave a draught containing a hundred drops of laudanum. The effect justified our most sanguine hopes. Sleep ensued, the ciculation rallied; every symptom of cerebral irritation subsided, fever broke up, and convalescence was speedily established.

* Vol. iv, p. 358.

The present short practical paper contemplates chiefly that condition of the brain in fever, in which an anæmic state of its vessels warrants us in availing ourselves of the stimulant properties of opium, with a view to maintain the equilibrium of the cerebral circulation. In such cases the use of the drug is salutary, chiefly as it favours an amount of congestion essential to healthy sleep. Not that its effects on vascular structure are its only merits; for it is fair to argue with Dr. Holland, that as "narcotic substances have effects, locally applied, on nervous sensibility," so also "there can be little doubt, that in sleep it is the same singular influence, extended more widely over this part of organisation, and reaching through the cerebral part of it, the higher faculties of our being."* But in anæmic conditions of the brain in fever, the use of opium seems to be salutary, we repeat, chiefly as it favours an amount of congestion essential to healthy sleep. "It is certain, that the states of sleep and coma frequently graduate into each other, in such way as to show that the proximate physical conditions are nearly the same in both;" for "one degree of pressure seems essential to perfect and uniform sleep, while a greater degree, without other alteration of state, assumes more or less the character of disease."† While such changes of the circulation in the head are obviously concerned in influencing the functions of consciousness and volition, it is equally manifest that an anæmic state of the vessels is precisely the one calculated to disarm the narcotic of its dangerous properties. But for that anæmic state, the cerebral capillaries might be goaded on by a full dose of opium into fatal coma. The necessity of a healthy amount of congestion and consequent pressure, however essential to the production of sleep, may be inferred also from considerations regarding the nutrition of the organ. "The sleep of animals," Dr. Carpenter tells us, "consists not in a state of diminished energy of the *nutritive* functions, but in the cessation of the *sensorial* activity, dependent upon a suspension of the functional power of certain parts of the nervous system, during which there is reason to believe that the nutritive and reparative operations of those organs go on with even augmented rapidity."‡ The value of sleep in this view, and the importance of a healthy circulation of the materials for nutrition, considering the wasting effects of sensorial hyper-activity in fever, are self-evident.

On witnessing such striking displays of the remedial virtues of opium, as in the case related above, one is fain to break out with Sydenham "in praise of the great God, the giver of all good things, who hath granted to the human race, as a comfort in their afflictions, no medicine of the value of opium, either in regard to the number of diseases that it can control, or its efficacy in extirpating them!" After all, most of its value depends on the discrimination with which it is prescribed. When injudiciously administered, as in sthenic cerebral excitement, or in the improper arrest of diarrhœa in certain states of fever, it has been observed to produce phrenitis, epilepsy, and coma; so also, when indiscriminately prescribed in delirium tremens, its employment has occasionally been followed by apoplexy. Great and marvellous, therefore, as are the virtues of opium in a variety of diseases, and admirable as are its soothing qualities in several of the forms of cerebral disorder in fever itself, yet let no man venture to prescribe it for the latter (whether in large or small doses) in the dark or at random. It is a sharp-edged tool, and of such fearful potency, that, if it fulfils not a curative intention, it will probably destroy life. There is no instance, in the whole range of practical medicine, more imperatively demanding a sure diagnosis. In short, our warrant to prescribe it hinges on our

* Holland's 'Medical Notes and Reflections,' p. 445.

† Ibid., pp. 450-1.

‡ Carpenter's 'Principles of Physiology, General and Comparative,' p. 78.

ability to ascertain precisely that condition of the brain which alone will admit of its safe employment.

It was a rare sagacity which led Dr. Graves to employ tartar-emetic in combination with opium in those cases both of idiopathic fever and delirium tremens, in which the narcotic would probably stimulate to over-congestion of the brain, but for the depressing action of the mineral on the heart and capillary circulation. This complex practice finds its parallel in the analogous operation of opium in states of anæmia in fever.

Medical science is more advantaged, perhaps, by defining the circumstances to which our known remedies are applicable, than by exploring the resources of nature for others. Not only is great discrimination necessary in deciding on the cases which demand the use of opium, but also in regulating the doses adapted to each variety. Little can be added to Dr. Lathan's admirable directions. Our rule of conduct indeed is suggested by the degree of sensorial excitement. "Simple wakefulness may be gently lulled to sleep by a few drops of laudanum, but wild delirium requires to be mastered and (as it were) forced into repose by a much larger dose." Opium, however, goes much farther; and, therefore, a much less dose is required in quelling asthenic sensorial disorder, combined with fever, than when it exists alone. Five minims in the milder cases, and twenty in the graver, may be considered minimum and maximum doses in fever. Much, after all, must be left to our vigilance in watching its effects, and to our discretion in judging when to desist, and when and in what doses to repeat the remedy. There are yet other "cases where the indications for the employment of opium are *doubtful*." We shall describe the variety of sensorial disturbance in fever in Dr. Latham's own words:—

"Wild delirium, and long wakefulness, and a circulation weak and fluttering, seem to call for a considerable dose of opium. Yet, withal, there is a *certain jerk* in the pulse, so that we cannot help suspecting that the blood-vessels have something to do with the sensorial excitement. Under such circumstances, I have certainly seen twenty minims of laudanum produce tranquil sleep, from which the patient has awoke quite a new man; but I have also seen the same quantity produce a fatal coma, from which he has never been roused."

Dr. Latham's recommendation, therefore, is in so dubious a case, and to avoid "striking a heavy blow in the dark," to administer a small dose at intervals of one hour or two, "so as to stop short of actual mischief at the first glimpse of its approach, or be led by a plain earnest of benefit to push the remedy to its full and consummate effect." Judicious as is this advice, we cannot but think, that on this mode of treatment of cases, in which, on Dr. Latham's own showing, "the indications for the employment of opium are doubtful," any practice which aims at once to keep down vascular action and soothe the nervous system is a real improvement. And such, we need scarcely add, is the complex method of Dr. Graves.

It only remains that we should revert to the *anæmic* type of sensorial disturbance in fever. In that milder variety of it which, as described by Dr. Latham, we placed in contrast with a much graver form, "a moderate dose of opium," he tells us, suffices to change a state of peril to one of convalescence. But his remarks do not contemplate so frightful a form of anæmia in fever as that of which we have given an example, and which might result equally from a large intestinal, nasal, or bronchial hæmorrhage, as from uterine. He speaks of heroic doses of opium only "in extreme cases of delirium tremens," while twenty minims of the tincture, he asserts, are quite sufficient for the purpose of subduing "the very same symptoms, carried to the greatest extremity, *when combined with fever*." But while "a moderate dose" suffices to relieve the

less urgent anæmic forms of the disease, the case related above as having occurred to my own observation, seems to sanction a bolder practice in the perilous cases of an extremely ex-sanguine condition of the brain in fever, coupled with the exhaustion resulting from protracted sensorial excitement.

ART. 19.—*On Interruption of the Respiration as a Sign of Impeded Activity in the Brain.* By Dr. LANDGRAF.

(*Deutche Klin*, 39, 1852; and *Schm. Jahrb.*, No. i, 1853.)

According to the author there is a frequent pause in the acts of respiration in cases of effusion or extravasation in or upon the brain, or in degeneration of the cerebral substance. The pause varies in duration from an instant to a whole minute, or thereabouts. It varies also very greatly in point of frequency, in some cases appearing with scarcely any perceptible interval one after the other; in others, after intervals of four or five minutes. The duration and frequency are almost in proportion to the degree of sopor which may be present, and the duration particularly would seem to be prolonged as the period of dissolution approaches. Four cases are given in illustration of the point in question.

ART. 20.—*Cases of Hemiplegia produced by the Plugging of one of the Cerebral Arteries.* By (1) Dr. RUHLE, of Breslau; and (2) Dr. BURROWS.

(*Virchow's Archiv*, Feb. 1853; and *Medical Times and Gazette*, Feb. 5 and March 19.)

These cases possess much interest in connection with Dr. Kirkes's paper upon the subject. (See vol. XVI, p. 90.) The first three are by Dr. Rühle, the last by Dr. Burrows.

CASE 1.—Emil Scholz, aged 19, was attacked (August 11, 1851,) by acute articular rheumatism, during the course of which he experienced pain in the præcordial region, accompanied with shortness of breath. Under the nipple and in the fifth intercostal space there was heard a loud systolic and a faint diastolic murmur; towards the right, the systolic murmur decreased in degree. There was a systolic murmur in both carotids. The radial pulse was small.

The diagnosis proclaimed—" Stenosis ostii aortæ; insufficient valv. semilun. aortæ; insufficient valvula bicuspidalis; hypertrophy and dilatation of both ventricles.

On the 6th of September, there suddenly came on loss of consciousness and paralysis of the right side, the latter affecting the muscles of the tongue, the face, and of the upper and lower extremities. The symptoms remained unchanged till death, which ensued September 27.

*Examination of the Body.*—Infiltration into the pia mater. The left arteria fossæ Sylvii is plugged in the first part of its course. The plug consists of a firm, calcareous deposit, surrounded by soft, yellowish fibrine; from this place to the next collateral branch, a clot filling the vessel; from there, the vessel empty. The walls of the vessel at the plugged point, and of the vessels generally at the base of the brain, smooth, transparent, and healthy. The whole left corpus striatum and neighbouring cerebral substance, to the depth of half an inch to an inch, of light yellow colour, and semifluid; it contained numberless fat granule cells; the rest of the brain normal. Fluid in the

pericardium; fibrinous shreds attached to the surface of the heart. Left ventricle greatly dilated and hypertrophied; nothing abnormal at the ostium venosum or valvula bicuspidalis. The semilunar valves of the aorta shrunken, thickened, and stiff. On the posterior valve a long, moveable, mulberry-like body, the size of a hazel-nut, consisting of lime, covered with fibrine. The inner surface of the aorta, close above the valve, torn transversely to about half an inch. The circumference and base of this slit, and the neighbouring parts, covered with a transparent, yellow, firm substance. The aorta and its branches normal. Other structures healthy.

That the concretion in the left arteria fossæ Sylvii came from some distant part is proved by the perfect integrity of the coat of the cerebral artery. In no other situation than that of the aortic valves was found this formation of calcareous matter. The mobility of the deposit, and the increased force of the current of blood consequent upon the hypertrophied condition of the muscular walls, and the narrowing of the aortic outlet, favoured the detachment of the deposits. Near the plugged vessel was found softening of the brain. Dr. Rühle thinks that the one must be the consequence of the other, when, as in the preceding case, the walls of the vessel are free from morbid change.

He then considers the connection between the hemiplegic symptoms and the ramollissement. Did the former, which came on suddenly some weeks before death, depend on the latter? Ramollissement may go on without producing symptoms during life; and in all cases it must be more or less progressive. Did the hemiplegia ensue upon its attaining a certain degree? The following case is one of special interest, as showing that the stopping of the circulation in the vessel can of itself call forth the symptoms of hemiplegia without there being any change in the cerebral substance.

Case 2.—Auguste Tietze, aged 34, suffered from acute articular rheumatism Jan. 9, 1851. Upon her dismissal, May 2, there was a systolic murmur, strongest at the apex of the heart; increase of the second sound in the second intercostal space on the left side; diminution in the third and fourth intercostal spaces. On July 22, the patient again experienced pain in the left knee-joint, attended with effusion. On September 12, she ate her breakfast as usual; an hour afterwards she was found speechless. There was paralysis of the right side of the face, difficulty in moving the tongue, inability to sustain the right arm when raised, or to bend the right leg. Death ensued at 2 p. m.

*Examination of the Body.*—The left internal carotid artery is plugged by firm, dry, brownish coagulum, from which softer and newer coagula extend into the arter. ophthalmica and arter. fossæ Sylvii; the common carotid is free; the cerebral substance unaltered; the left auricle of the heart enlarged and hypertrophied; the ostium venosum sinist. narrowed to a fissure, which only admits the little finger. At the left extremity of this fissure lies a dry, brown coagulum, imbedded in a calcareous fissure; it is about the size of a cherry, and projects by its free extremity into the left ventricle, which, however, was quite healthy.

The formation of warty growths on valves, which offer no impediment to the circulation, and produce no morbid sound, may lead to the same phenomena in cases beyond the reach of diagnosis.

Case 3.—Frau Schwenk, aged 26, admitted into the hospital Dec. 18, 1851, with paralysis of the right side of the body, and symptoms of extensive tuberculous disease in the chest. Died Jan. 1, 1852.

*Examination of the Body.*—Upon the convex surface of the upper surface of the left cerebral hemisphere is a diffused extravasation of blood. The vessels at the base of the brain are quite normal. The left internal carotid contains,

with a perfectly healthy condition of its walls, a white and elastic plug, completely filling the vessel, and extending to the arter. ophthalmica. Some of the convolutions are softened in the middle lobe as deep as the wall of the lateral ventricle. In the heart, there was seen, from the left auricle, upon the long process of the bicuspid valve, in the middle between its free end and point of insertion, two irregular fibrous coagula about the size of cherry-stones. The valve in other respects normal. No other coagula in any other part. In the lungs were found extensive vomicæ.

In the three cases here related there was plugging of the cerebral arteries of the left side, with paralysis of the right half of the body. If in the left side of the heart fibrinous or calcareous deposits become separated and are driven forwards by the stream of arterial blood, they reach the left carotid much more easily than the arteria innominata, as the former is much more the continuation of the first part of the aortic arch than the latter, which is given off at an angle.

A similar explanation, viz., the angle by which the vessel leaves the trunk, is offered by Virchow to account for the more frequent occurrence of mortification in the left lower extremity from the plugging of the left iliac artery.

Case 4.—George Beresford, aged 11, admitted into John ward, St. Bartholomew's Hospital, on the 20th of October, 1852. His aspect was languid; complexion dark; skin warm and moist; body emaciated; chest prominent; pulse 96, small, soft, irregular; tongue moist, slightly furred; bowels regular; urine natural; complains of headache, affecting him most in the morning; sleeps badly; has incomplete hemiplegia of the left side; has some cough, and expectorates a tawny, tenacious mucus, mixed with air-bubbles. His fingers are clubbed, and the nails adunque.

*Auscultation.*—No undue dulness in the præcordial region; heart's impulse excessive, it is seen as well as felt; its action is irregular and intermits; there is a loud systolic murmur at the apex, but not so loud at the base, where the second sound is loud and flapping, not to be detected in the aorta.

*Auscultation, right side.*—There is loud breathing and large crepitation, amounting almost to gurgling, with a peculiar click in the upper lobe. On the left side the breathing is loud and coarse, almost overwhelmed by the heart's sound. Behind, right side: some rhonchus, sibilus, creaking, and large crepitation. Left side: only rhonchus; heart's sounds are transmitted to both sides; slight dulness on percussion in right subclavian region.

*History.*—He lives with his parents in London; when walking eleven weeks since with his cousin his mouth was suddenly drawn to the right side, and he lost the use of the left arm, partially of the left leg; he said to his cousin he felt as if he were silly; he was able with some difficulty to reach his home; when he arrived there he complained of pain in his head, and was sick; was put to bed; was delirious; and continued thus for two days, when he was admitted into the hospital, under the care of Dr. Hue. Whilst in the hospital his mind was so deranged that he was removed to a separate ward. Having almost recovered the use of his arm and leg, he was discharged at the expiration of three weeks. He then continued under the care of Mr. Wood, the resident apothecary, for a fortnight, during which time he was able to walk to and from the hospital and his home, a distance of a quarter of a mile, when, having almost recovered the use of his limbs, the pain in his head having much decreased, and his mind having become more collected, he went into the country, where he remained three weeks. On his return his head was again affected, so that he wandered much, and at times talked very incoherently; at the same time, too, he had much difficulty of breathing, with pain in the chest, and cough. About a week after his return his cough continued

to increase, and he was altogether getting worse up to the day he was admitted Previously to the hemiplegia he was always ailing, having a bad appetite, being weak, and constantly complaining of pain in the left side, and frequently of a dull aching pain in the head. He was inactive, and incapable of retaining what he learned at school.

*Remarks.*—Here was a clear history of sudden hemiplegia, occurring in a boy with an irregular and intermitting pulse, and having symptoms of pulmonary and cardiac disease. What was the diagnosis? The chronic pulmonary disease was probably tubercular. The cardiac auscultation revealed the existence of disease in the mitral valve, with hypertrophy of the heart. But how to account for the sudden attack of hemiplegia, a disease which is very rare in children of his age? The first idea was, that it might be the result of tubercular disease in the brain; but that generally sets in with convulsions, followed by loss of power. Such symptoms were absent in this case. Remembering, then, that he had valvular disease of his heart, and bearing Dr. Kirkes's paper in mind, it seemed most probable that it was a case illustrating his views, and that the hemiplegia was dependent upon the sudden impaction of a mass of fibrine in the right middle cerebral artery, thus cutting off the supply of nutriment from a certain portion of the brain.

The treatment adopted was occasional counter-irritation to the chest; various expectorants and sedatives to allay cough; the cod-liver oil and nutritious diet to support his wasted frame, and ultimately some wine daily to sustain his flagging heart.

He remained in John ward under observation for six weeks, during which period the auscultatory signs of diseased mitral valve, as well as of the chronic pulmonary disease, suspected to be tubercular, were frequently verified; but he gradually sank and died, Dec. 5th, 1852.

*Autopsy.*—Lower half of body and left arm anasarcous; some œdema of the scalp. The *membranes* of the brain healthy, slightly blood-stained from decomposition.

*Brain* healthy in its general appearance and texture, and freely supplied with blood, though, at the same time, softer than natural, (probably from decomposition.)

The *right corpus striatum* and neighbouring portions of the lower part of the middle cerebral hemisphere were much softer than other parts of the brain, breaking down, on pressure, into a kind of pulp, from which a thick, creamy fluid exuded. Though thus softened, this portion of the brain substance was not apparently much less vascular than other parts, and there seemed a fair amount of blood in most of its small vessels. On tracing the vessels of the part to the *right middle cerebral artery*, there, as was anticipated, at or about half an inch from its origin, this vessel was plugged up by a firm nodular mass about the size of a hemp-seed, which formed a very manifest projection on the line of the vessel; the under part of this plug, which was evidently composed of a fibrinous material, was dark and blood-stained; the upper part firm, white, quite calcareous, and gritty. On laying open the vessel, its canal was found almost, if not quite, blocked up by the coagulum which adhered rather firmly to the interior; it consisted of partly firm and partly soft and reddish fibrine, in the midst of which were numerous grits of calcareous matter.

With the exception of the coagulum in the right middle cerebral, there was no disease of the arteries of the brain.

*Cerebral sinuses* healthy, and contained recent coagula.

*Heart* generally and greatly enlarged; all the valves healthy except the mitral, which was extensively diseased, especially along its free border, and

about the attachment of the tendinous chords; attached to the auricular surface of the free edge were several long narrow pedicles of old whitish fibrine, more or less degenerated into a calcareous material; one or two masses were about half an inch long; between them, along the same line, were numerous smaller deposits and granules adherent to the edge of the valve. About the middle of the aortic cusp of the mitral was a large ulcerated opening, extending entirely through the thickness of the valve, but closed up by newly-deposited fibrine. The tendinous chords were much diseased, most of them thickened, matted together, and roughened by deposits of whitish fibrine; several were ulcerated across, the free ends hanging loose, and studded with little granules of fibrine. The lining membrane of the posterior part of the left auricle was roughened by small fleshy-looking growths, slightly elevated above the surface, and here and there intermingled with distinct granular deposits.

*Aorta* narrow; all the great arterial trunks unobstructed. The large *venous* trunks contained only recent coagula.

*Lungs* congested; several masses of pulmonary apoplexy, also several lobules collapsed, devoid of air, and of a darker colour than the surrounding crepitant portions. The general texture of the lungs appeared healthy. No tubercular deposits, but the bronchial tubes contained large quantities of mucus.

*Spleen* large and congested, the surface puckered and fissured in places; at the bottom of one of the fissures was a firm bright yellow mass about the size of a pea, surrounded by a dark red halo.

*Kidneys* much congested, especially at the junction of the cortical and medullary portions; there were also one or two ecchymosed blotches on the surface, the cortical parts of which were buff-coloured, the circumference dark red; there were also several depressions and fissures, at the bottom of one of which was a buff-coloured mass. The surface of the gland generally had a spotted appearance, from dots of intense congestion.

Nothing particular observed in the other viscera.

## Art. 21.—*On Epileptiform Neuralgia.* By Prof. Trousseau.

(*Archiv. Gén. de Méd.*, Jan. 1853.)

Under this name M. Trousseau describes a variety of tic douloureux, formerly described by Fothergill, of which the most characteristic sign is its extreme obstinacy and incurability. It is sudden, transient, violent, often accompanied with muscular twitching or convulsive movement, and not unfrequently with vertigo. According to M. Trousseau this affection is a kind of aura epileptica, and angina pectoris is one of its varieties. Its seat may be in the head, trunk, limbs, anywhere.

A few cases are given in which the pain was chiefly in the face, but these present no particular interest either as to symptoms or treatment. They all agreed in their obstinate incurability, and they all were benefited to some extent by large doses of opium. In some of them division of the nerves gave rise to temporary relief.

ART. 22.—*Rapid Cure of a very Severe Form of Sciatica.* By Dr. KIRBY, Ex-Professor of the Practice of Medicine in the Royal College of Surgeons, Ireland.

(*Dublin Medical Press*, Dec. 15, 1852.)

The following case is taken from a paper, headed 'Miscellaneous Cases and Observations in the Practice of Physic.'

The Rev. Mr. F. called on me (says Dr. Kirby) a fortnight since, having come from Liverpool to consult me about a sciatic affection which he suffered from for three months, and by which he was nearly crippled. His attack was at the left side, and it was particularly keen at that part, to which he was stooped down. The pain was very great in the fold of the groin, the anterior part of the thigh, around the tuber ischii, but especially behind it, whence it followed the course of the nerve to the ankle and foot. There was also much uneasiness all over the left hip and loin. He was quite lame. The limb was wasted, and it seemed shorter than the other.

In the day time he was tolerably free from distress, so that he could go limpingly about; but when evening came nothing could exceed his agony, which continued all night, not much mitigated by seventy drops of laudanum, which was his evening dose. His bowels were right, he ate sparingly, and took next to no stimulant.

Having had my advice while a resident in Ireland, and always successfully, in many anomalous illnesses, which I, however, believed to be of a gouty nature, he resolved he would consult me in the present instance. I prescribed as follows:—

℞ Tinct. aconiti, ℥j;
Vini colchici, ℥iv;
Mist. camph., ℨx;
Syrup. croci, ℨj. Ft. mistura.

He was to take thirty drops of Battley's solution each night, and two table-spoonfuls of the mixture three times a night, to dine sparingly, and to have one glass of wine afterwards.

In six days his son called to say he was much better, but that the medicine made him giddy and confused his mind in the day time. I now desired he should have half the quantity of the mixture, and continue to take it at that rate until he would see me, which would be in five days.

Mr. F. now came to town and visited me. He had very little uneasiness, and I make no doubt it disappeared under the use of a stimulant liniment.

℞ Liniment. camph. co., ℨiv;
„ saponis, ℨiv;
Sp. terebinth, ℥iv;
Tinct. aconiti, ℥ij. M. ft. liniment.

℞ Ung. antim. tart. ℨj;
Ol. palma unc. ft. ung.

Mr. F. at his second visit complained that his urine was a little painful on being passed. I ordered him pills of opium and soap, with the following draught, to be taken only if he was restless.

℞ Liq. opii sed., ♏j;
Syrup. rhœados, ℥j.
Aquæ, ℥j. M. ft. haustus.

About eight days from the last visit, the Rev. Mr. F. called on me to report himself a new and recovered man. He had no occasion for the night draught, and he put aside all other medicine, with the exception of the last pills I prescribed, which, for the benefit they yielded, he begged I would allow him to continue for a fortnight longer, when he hoped to see me and take leave.

## Art. 23.—*On the Proportion of the Subjects bitten by Mad Animals, who become affected with Hydrophobia.*

By Professor Renault.

(*Medico-Chirurgical Review*, Oct. 1852.)

M. Renault, Clinical Professor at the Veterinary School at Alfort, has recently presented to the Academy a valuable Report, adverse to the claim again recently set up for the prophylactic power of mercurial inunction in hydrophobia. As this claim has been over and over again refuted, we should not have adverted to the subject, but for the valuable incidental matter introduced by the Professor into his Report. He observes, that before we can receive the numerous cases which have been published of the preservative power of mercurial salivation, it is necessary—

1. That it should be placed beyond all doubt that the animal inflicting the bite was really mad; and that all persons supposed to have been preserved have already been exposed to the infection. On examining the histories of these cases, however, such proof is quite defective, as in some of those related—*e. g.*, by Ehrmann and Audry, the persons had not been bitten at all, but had merely lain or drank with those who had, or had wiped away their saliva.

2. Next, when persons have been really bitten, and the animal has been really mad, we must be satisfied that the poison has been deposited in the wound. But numbers of the persons referred to have been bitten through their clothes, and every one knows how small a proportion of such acquire hydrophobia, even when no treatment at all has been employed.

3. But even when the poison has been duly deposited in the wound, to admit the preservative power of the mercury, we must allow that all such persons would necessarily suffer from hydrophobia if left to themselves. Numbers of cases contradictory of this are, however, on record. But although all careful observers admit this, the *proportion* of such as escape has never been duly investigated; and the subject being one of the highest interest, M. Renault takes the opportunity of communicating the results of the investigations he has been conducting upon it at Alfort since 1828.

To prevent confusion, he arranges the cases he has collected in two categories. (A.) Cases of dogs or other animals accidentally bitten by others, either mad or supposed to be so, and sent by the police to Alfort, to remain under inspection. Of 224 dogs so brought, between 1827 and 1837, which continued under observation for more than two months, without undergoing treatment, 74 or nearly one-third became mad, and 130 or two thirds exhibited no symptoms. It is evident, however, that these cases do not afford any measure of the activity of the virus; for the dog that caused the bite may not always have been mad, the bites could not always be verified, and the hair of the animal may have prevented the poison from penetrating.

(B.) For this reason, another series of facts is adduced. From 1830 to

the present time, certain dogs known as really mad have been made to bite, at the Clinical School, other dogs or herbivora in portions of the surface of delicate structure and devoid of hair, or inoculation has been performed with some of their saliva, collected during the height of the paroxysm. Of 99 dogs, horses, and sheep, so treated, 67 became mad, and 32 continued under observation more than 100 days without any symptom exhibiting itself. Thus, in this category, in which every circumstance favorable to infection was secured, no less than one third of the animals escaped, without undergoing any treatment whatever.

Examining the experience of other clinical professors, M. Renault says, that Professor Rey, of Lyons, has found that among animals who were accidentally bitten in the streets, and then placed under *surveillance*, 1 in 5 of the dogs, and 1 in 4 of the horses, became mad. Of those bitten or inoculated experimentally, 2 in 3 became mad. Of 16 animals accidentally bitten at Toulouse, 5 became mad. Professor Hertwig, of Berlin, states, that of 137 dogs accidentally bitten, 16 only became mad, 121 remained uninjured; while of 25 experimentally infected 10 became mad, and 15 did not. Thus, in both the categories, the proportion affected was sensibly less in Berlin than in France, whether this be owing to climate or other cause.

Thus, taking things at the worst, it results from these observations, made at different epochs, that two thirds of the animals accidentally bitten, and one third of those artificially infected, escape.

Still, it must not be supposed, that these *mean results* of a great number of observations can be applied when speaking of the bite of a particular dog; for M. Renault has repeatedly observed, that while one dog, evidently mad, bites several others, and only one sixth or one seventh of these shall suffer, the virus conveyed from another dog, to all appearance in just the same condition, will infect nearly every animal (five sixths or six sevenths).

Moreover, it is generally believed that the bites of *mad wolves* are oftener followed by hydrophobia than are those of dogs. Of 254 examples of such bites, the histories of which M. Renault has been able to collect in authors, in 164, or nearly two thirds, hydrophobia followed—the proportion for accidental bites by mad dogs being only one third. Whether this depends upon the fact, that in the wolf the rabies is oftener spontaneous, or upon the more remarkable one, that this animal almost always bites its victim in the face, neck, or head, is uncertain.—*Bull. de l'Acad.*, tom. xvii, p. 280.

Hydrophobia has recently been very prevalent in France, so that something like a panic has been produced, and the journals teem with accounts of supposed remedies. The police have made a terrible onslaught on all wandering dogs; and the exemption of London from the disease, since the prohibition of the employment of dogs as beasts of burden, has been adverted to. It would be desirable to ascertain how far this exemption has extended beyond the metropolis, where alone the dog-act is in operation. How much remains to be cleared up in the history of *rabies canina*, is seen by a communication from Clot-Bey (*L'Union Méd.* 1852, No. 94), in which he states, that while dogs exist in such vast numbers in various parts of Asia and Africa, hydrophobia is of the rarest occurrence. In Egypt, where he lived during twenty-five years, he never heard of a case, although the dogs wander about the towns and villages in vast numbers, under a burning sun, panting for breath, ill-fed, and often deprived of water. He thinks that much may be due to the promiscuous intercourse which their entire liberty allows to these animals. In Greece, on the other hand, the disease is excessively prevalent.

## Art. 24.—*On Spasmodic Diseases.* By Alex. Wood, m.d., f.r.c.p., Ed., Lecturer on Practice of Physic, &c.

(*Edin. Monthly Journal,* Feb. 1853.)

The following important remarks form the substance of one of Dr. A. Wood's 'Contributions to Rational Medicine.' Their spirit and tendency are in very close harmony with our own views on the subject, though this harmony is not recognised by the author. After some preliminary observations Dr. Wood proceeds:—

### I. Muscular Contractility.

#### a. *Physiological Considerations.*

I. *What is contractility?*—It is an endowment of muscle, as muscle—a *vis insita*—its own its independent function. Moreover, it is the property of living muscle, like all other vital properties—the more living the structure the more energetic the function.

II. *What it requires.*—1st. In its performance it exhausts nourishment; therefore in its performance it must demand nourishment. This it receives from the blood, and the blood in its turn obtains supplies by *nutrition.*

2d. Muscle also demands a vital stimulus—oxygen. This too the blood supplies by its red particles, and this the blood receives by *respiration.* Hence, where much muscular exertion is required, much blood is demanded, and that blood in a higher state of oxygenation. This is seen (*a*) in the individual, and (*b*) in classes of animals. *a.* In the individual, violent muscular exercise accelerates respiration, and subsequently demands an increase of food. *b.* In classes of animals we find that a direct relation subsists between muscular power, the quantity of blood sent to the muscles, and the degree of oxygenation of that blood. Thus animals may be arranged in this respect as in the following table:—

| | |
|---|---|
| i. Birds. | iv. Reptiles. |
| ii. Insects. | v. Fish. |
| iii. Mammals. | vi. Crustacea. |

3d. The more strongly an animal, or part of an animal, lives, the more readily it dies, *i. e.*, the more dependent it is on rapid nutrition, the more quickly does it perish when that nutrition is arrested. Stop the nutrition or respiration of an animal, and it will be found that muscular contractility disappears exactly according to the place it would hold in the foregoing table—birds losing the power soonest and crustacea last.

4th. The law of irritability, or that of re-action on a stimulant, is just the counterpart of the law of contractility, and, therefore, as has been well shown by Dr. Marshall Hall, is inversely to the rapidity of the circulation, and of the respiration. The less blood and the less oxygen a muscle receives, the more easily is it excited to contraction. "Such is the irritability of the muscular fibre of the frog that it and the galvanic agency are mutual tests of each other."*

These four physiological laws will be found to have important pathological analogues, especially in reference to the predisposition to convulsive diseases.

#### b. *Pathological Deductions.*

To keep a muscle healthy, it has been shown that it must have nourishment and oxygen from the blood, and that it is therefore dependent on nutrition for the one, and on respiration for the other. 1st. In almost every spasmodic

* Bostock, quoted by Dr. Marshall Hall.

disease, assimilation is interrupted. Take, for example, CHOREA.—"In the advanced period of the disease," says Dr. Hamilton, "flaccidity and wasting away of the muscular flesh take place, the consequence of constant irritation, of abating appetite, and impaired digestion, the common attendants of protracted Chorea."* Or take LARYNGISMUS STRIDULUS. How commonly is it associated with impaired nutrition and with well marked derangements of the digestive organs, and how impotent do all drugs prove for its cure, unless associated with pure air, and carefully regulated diet. Or take SPASMODIC ASTHMA. "Of all the predisposing causes of asthma," says Dr. Forbes, "dyspepsia in some of its forms or consequences is by far the most frequent. * * * * It is only, however, in what may be termed secondary dyspepsia, or that general disorder of the system which is often the consequence of long continued irritation of the chylopoietic organs, that results of the kind now contemplated arise."† Or in INFANTILE CONVULSIONS. The opinion is gradually gaining ground, and has been prominently advocated by Dr. W. L. Mauthner of Vienna, that convulsions comparatively seldom occur in children as the primary results of disorder of the nervous system, but are very frequently to be traced to an interruption between the nutrient parts and the parts nourished, inducing irritability of the muscles.‡ In corroboration of this opinion, we may cite the facts collected by M. Bouchut, which clearly show that in ten out of eleven children who died at different periods after convulsive seizures, the brain presented no morbid appearance whatever.§

2d. Impeded respiration, and consequent deficiency of the red particles of the blood, is often associated with spasmodic diseases. How often is the bronchitis of infancy closed with convulsions! and how frequently do we fail to detect any adequate cause for this in the state of the nervous centres! "It goes to the head," we say, but where is our proof? It goes to the blood would perhaps be a more satisfactory exclamation. Again, a careful examination of the Parliamentary reports on the state of large towns, serves to show that the habitual inhalation of the impure air of these localities arrests the muscular development, and gives a greater liability to spasmodic diseases.

3d. The third physiological law went to show that the more rapid the nutrition, the more sudden the exhaustion consequent on its arrest. All muscular action demands nutrition, and as the supply is not constant it is soon exhausted, which explains (*a*), the excessive exhaustion produced by all spasmodic seizures, and (*b*) the great and sudden collapse by which the paroxysm is so often followed. And perhaps also (*c*) the enormous appetite which we often see in convulsive diseases after the attack, as, for example, epilepsy.

4th. The fourth law showed that the irritability of a muscle was inversely as its contractility—that as its strength declined, its irritability increased. From this, several pathological inferences may be deduced—(*a*) Why muscular weakness should predispose to convulsive disease—(*b*) Why convulsive diseases should be especially frequent in the young—(*c*) Why losses of blood and anæmia generally, should so often give rise to convulsive affections—(*d*) Why the frequency of convulsive seizures, and therefore the severity of the disease, is not a sign of the patient's strength but of his weakness.

### c. *Etiological Deductions.*

I limit the inquiry, of course, to predispositions. Laws 1 and 2 teach us

* Observations on the Utility of Purgatives, p. 69.

† Cyclopædia of Medicine. Article 'Asthma.'

‡ See Brit. and For. Med. Rev., vol. xxi, p. 391.

§ Man. Prat. des Malad. des Nouveaux Nés, &c. &c. Par E. Bouchut. Paris, 1845.

the effects of mal-nutrition, impure air, and diseases of respiration, in producing convulsions. Law 3 explains why full health wards off convulsive diseases, but renders them more fatal when they do occur. Law 4 explains how excessive losses of blood and weakness generally serve to induce convulsive diseases, and how in persons of lax muscular fibre, spasmodic affections are liable to occur on the application of very slight irritants.

### D. *Therapeutical Considerations.*

These, of course, are restricted to the subject of prophylaxis.

1st. The impaired nutrition suggests the propriety of attention to the digestive organs in all cases of anticipated spasmodic seizure. 2d. The state of the red particles, the carriers of oxygen, explains the action of the salts of iron so successful in some of these diseases in the hands of Elliotson and others; the researches of Andral and Gavarret having shown that by their use the red particles of the blood are increased. It also teaches us the value of change of air. 3d. We learn from this law how cautious we should be in the use of the lancet in diseases whose danger often seems to consist in the rapidity with which they exhaust the nutritive supply, and the advantage of pouring in nutriment as fast as it can be assimilated in all cases where this exhaustive process is at work. 4th. A knowledge of the existence of increased irritability, and of its augmentation as the exhaustion of the disease proceeds, should make us very carefully guard our patients against every source of irritation, whether mental or corporeal. From it we also learn the importance of exercise, the great strengthener of muscular fibre, in the intervals between spasmodic seizures. "The epileptic," says Dr. Cheyne, "ought to be trained so as to be in good wind, or, in other words, his muscles ought to be in a state of the utmost strength and firmness. If we permit ourselves to take a lesson from empirics, we may surely avail ourselves of such information as may be derived from a brotherhood at least as respectable, namely, the 'gentlemen of the fancy,' as they are called, or we may have epileptics trained as the athletæ in ancient times."* I shall attempt to reduce this to a table :—

| | Physiological. | Pathological. | Etiological. | Therapeutical. |
|---|---|---|---|---|
| 1. | Dependence on nutrition. | Connection with malassimilation. | Effect of indigestion. | Attention to diet. |
| 2. | Do. do. on oxygen. | Do. with diseases of respiration. | Do. of impure air. | Use of iron. Change of air. |
| 3. | Power exhausted in proportion to the amount of nutriment demanded. | Speedy exhaustion and hunger by which attack often followed. | Full health wards off attacks, but makes them more dangerous. | Caution in depletion. Attention to prevent exhaustion. |
| 4. | Irritability increases as strength (contractility) declines. | Why so often associated with weakness, and occuring in the young. | Why arise after losses of blood, and in persons of lax fibre. | Avoid all irritation during paroxysm. Importance of exercise in the interval. |

## II.—Agents exciting Contractility.

In the first division of the subject it has been attempted to show, that whatever may be the exciting causes of spasmodic disease, to effect the production of one of these diseases, a peculiar state of the muscular system

* Cyclop. of Practical Medicine. Art. 'Epilepsy.'

must exist; and that as these three—muscle, blood, nerve—concur in the production of healthy muscular action, so are they equally concerned in that which is diseased. Passing then from the consideration of the predisponent, and taking a survey of the exciting causes, the first thing with which we are struck, is the vast variety and apparently opposing character of these. Some of these causes are mechanical, some chemical, some vital, and another class mental, and this affords a groundwork for division. But again, when we have grouped these causes under the several heads so indicated, it may be observed, that those ranged under each head admit of a twofold division, according to the nature of its action. They must all act by modifying the vitality of the tissue to which their operation is directed. It is the office of one class to exalt, and of another to depress, that vitality, which serves as a foundation for another division of each class into stimulants and sedatives. These terms are not used with reference to the effect of the agents on the vascular system; primarily, they seem to affect the nervous tissue, though subsequently through it they affect the contractility of the heart, and thus the circulation at large.

* * * * * *

The great majority of the exciting causes are sedatives, and not stimulants, as is generally supposed. However opposed these two classes of agents may apparently be, and although they are usually regarded as antagonistic, yet it is a singular fact, that their secondary effects on the vital actions are very similar. By both, the relation between the energy of the organ and the nutritive supply is altered. By the one, the vital energy is increased, so that it is in the relation of *plus* to the nutrition. By the other, the vital energy is diminished, so that the nutrition is *plus* to it. But in the former case, after a short time, the nutritive supply becomes exhausted, and the vital energy becomes *minus*. The final result is thus the same; in both cases diminished vital energy, the nutritive material, however, being *minus* in the one and *plus* in the other. It is evident, then, that every excitant, whether stimulant or sedative, changes the relation of the part on which it acts to the blood.

* * * * * *

To sum up these observations on the modus or manner in which the known exciting causes of spasmodic diseases operate, it is to be observed—*a*. That the ascertained predispositions infer a state of the muscular system implying diminished contractility with increased irritability. *b*. That almost the entire exciting causes are sedative in their operation. *c*. That those causes which act as stimulants produce, like other stimulants of the nervous system—*First*, a brief period of excitement; *Second*, a state of exhaustion, with excitability; *Thirdly*, a state of atonic exhaustion; and that is not until the second or third of these effects have been produced, that the convulsions are displayed. *d*. That it is on the nerves of sensation chiefly that the sedatives operate.

It may thus be assumed, that the best recognised causes of convulsive diseases act as sedatives; and by suspending volition and sensation, bring the patient into a state resembling that of the narcotised or decapitated animals in Dr. M. Hall's experiments.

It thus appears that the name exciting causes is scarcely properly applied to the majority of those which we have so termed; for their action only tends to bring the muscles under the operation of the excito-motory system, leaving it to other irritants to operate through it on the muscles.

* * * * *

*Therapeutical conclusions.*—If the foregoing conclusions are admitted, they

show our present treatment to be sadly irrational, and furnish important indications for its improvement. But, indeed, whether admitted or not, the treatment ordinarily pursued is so very contradictory as to prove, that it at least cannot be right. In the severer convulsive diseases, as tetanus and hydrophobia, wine, brandy, and opium,—stimulants,—are conjoined with the cold affusion or cold bath,—sedatives. Opium in small doses, which as a stimulant and soothing remedy might prove useful, is counteracted by tobacco, a sedative, or by irritating and depressing purgatives. We are told to administer the most violent purgatives in these diseases, and are encouraged to persevere in their employment to an enormous extent, by the hope of eventually obtaining from the bowels an assortment of strange and heterogeneous matters.

In these diseases, where the violent muscular effort demands a large supply of blood, and where the want of that supply increases the irritability of the system, we are taught to bleed, beginning with from thirty to forty ounces, and repeating it if need be. What end can bloodletting possibly subserve, unless in those exceptional cases, to be afterwards specially considered, where urea exists in that fluid? There is no morbid matter in the circulating fluid which bleeding can remove! There is no inflammation which it can subdue! On the contrary, that terrible muscular action, like a consuming fire, is draining away the nutriment of the system even faster than your relentless lancet, and when the supply is exhausted the flickering taper will expire.

Or, in the case of an unhappy infant,—ill thriven, ill fed,—who has imbibed irritability of constitution with the milk of a gay, luxurious, self-indulgent, and nervous mother, and who has had that irritability confirmed by a long course of ill-regulated management, —why will you, when the irritation of a tooth has proved the cause of convulsions, not rest satisfied with removing the immediate pressure, and then set about improving the general system, in which the real danger lies, but apply cold to a head where no symptom of congestion or inflammation is to be found, harrow the gums with daily scarifications, and administer a powerful purgative, glorying in the expulsion of depraved secretions, which only indicate the impaired state of nutrition, and the necessity for a very opposite kind of treatment?

But enough of these comments. Let me very humbly but very earnestly solicit the attention of my professional brethren to the following therapeutical considerations, based on the physiology and pathology of spasmodic affections:—

1st. The importance of great attention to a proper supply of nutriment and of air in all circumstances where either hereditary tendency or other circumstances are likely to develop convulsive diseases. Trismus nascentium is epidemic in the West Indies, from the absurd way in which infants are there treated. The same disease was banished from the Dublin Lying-in Hospital by proper attention to ventilation and cleanliness.

Laryngismus stridulus is never so satisfactorily treated as by change of air. The mortality of tetanus in our naval stations in the West Indies has been very much reduced, mainly, according to Dr. Dickson, by improved hygiene. —(*Med.-Chir. Trans.*, vol. vii, p. 765.)

2d. Let us divest our minds of the idea that it is necessary to treat the fit in any of these diseases. It is only a part of a train of morbid phenomena, and though the part most striking to the bystander, ought not to make the same impression on the intelligent physician. No one now thinks of treating the fit, either in epilepsy or in chorea, and why should we think it necessary in tetanus or hydrophobia?

3d. Is it not worthy of consideration whether the obstinate constipation in

tetanus and lead poisoning may not be a spasm of the muscular coat of the intestines analogous to that of the voluntary muscles, and, like it, not to be overcome by brute force (*i. e.*, purgatives)? Certain it is, that in lead colic the finger, introduced into the rectum, is held by the sphincter as by a vice, and pressed tightly upon by the gut, and that this pressure returns at each paroxysm.* Certain it is also, that the retraction and hardness of the abdomen, associated by Merat † with that internal constriction, is found also to exist in tetanus, though I am not aware that any one has ever explored the internal state of the bowel in that disease. It may be necessary to remove the morbid secretions in the bowels, though every intelligent physician will have to balance the amount of irritation produced by their presence with that caused by the drastic purgatives necessary for their removal. The spasm which retains them is the effect of the disease. It is to treat symptoms, to attack it alone; and when we succeed in overcoming the disease, the bowels will spontaneously relieve themselves. Tralles‡ found opium succeed in a case of ileus where purgatives had failed. I have seen the same. Lentilius§ has confirmed this; and in a severe form of colic, Bonn ‖ became convinced by experience that it was the most powerful remedy.

4th. The most efficient and the most frequent agents in the production of these diseases are sedatives. Bloodletting is a most powerful sedative, and if carried to any extent in a healthy person produces convulsions. Is bloodletting, then, a suitable remedy in these affections? In chorea it was formerly practised, and is now abandoned from the injurious effects which it produced. In delirium tremens and hysteria, its use has also been given up. In epilepsy it is rarely used by intelligent physicians, except to meet the requirements of secondary affections; and if we still retain its employment in the more severe convulsive diseases, it is probably only because their rapid course and frequently fatal issue makes it very difficult for us to ascertain the effect of any treatment.

5th. In one class of convulsive diseases bloodletting seems, in the present state of our knowledge, to be indispensable. Where urea exists in the blood and produces convulsions, it must either be expelled or counteracted. We scarcely know how to accomplish the latter indication, and therefore are driven back on the former; but, even while seeking by bloodletting to get rid of the urea which is mixed with that fluid, we must never forget that it "both acts on the nervous system as a narcotic poison and impoverishes the blood, inducing degeneration of the tissues;"¶ and that, therefore, while we take blood to remove the poison, we must do our utmost to replace the nutriment which we are unavoidably compelled to abstract along with it.

6th. Our views on this subject would become more definite and precise, could we avoid imagining that spasm implies augmented strength. It is not easy for us, when seeing the violent agitation of the system which prevails, to divest our minds of the idea of great power being developed, but the same remarks apply to mania, in which disease, thanks to the exertions of Dr. W. A. F. Browne,** general depletion, tartar emetic, brisk cathartics, and ice to the shaved scalp, are no longer in such vogue as they once were.

If such are the objections to the routine practice, what course ought to be

* Tanquerel—'Traité des Maladies de Plomb,' &c., p. 210.
† Traité de la Colique Metallique.
‡ Opii. Usus et Abusus, sect. 2, p. 260.
§ Eph. Mat. Cur., dec. 3, ann. 1, p. 131.
‖ De Officio Medici.
¶ Williams's 'Principles of Medicine,' p. 150.
** Monthly Journal, 1841, p. 75.

pursued? It is easier to point out error than to demonstrate truth. But I venture to suggest—

7th. That sedatives should be cautiously used. Chloroform and cold affusion have each proved fatal in delirium tremens.

8th. That every effort should be made to put into the system as much nourishment as it is capable of beneficially employing.

9th. But, if there is any faith to be placed in antipathic treatment, it is to stimulants we must not trust.

10th. It is worth observing, that most of those chemical agents which produce convulsions, acting, as has been already said, in large doses as sedatives, do in small doses act as stimulants.

11th. We find also, that where the minor spasms, as cramp, have been excited by irritation of the peripheral distribution of one class of nerves, as those of the mucous lining of the bowels, they are often relieved by irritation of the peripheral distribution of another class of nerves, as by friction on the skin.

12. The cerebral functions, more especially volition and sensation, being much in abeyance, any stimuli, whether mental or physical, by which they can be excited, should be freely given. It was on this principle that Boerhaave prevented the recurrence of epileptic attacks, by directing a red-hot iron to be applied to any who might be seized.*

13th. The extreme sensitiveness to all irritations which exists whenever the spinal predominates over the cerebral system, suggests the propriety of enforcing the most absolute quiet, and preventing the access of all bodily and mental stimuli. In tetanus and hydrophobia the creaking of a shoe, the slamming of a door, the sight or even the thought of water, or the gentlest zephyr playing on the surface of the body, excites a fit. Hence Armstrong tells us, that in tetanus those patients recover best who get little active treatment, but are nursed, as it were, through the fit.†

14th. And if sources of irritation ought to be prevented, those actually existing ought to be removed, but never by irritants which are more powerful than themselves. This surely gives sufficient latitude to the most devoted admirer of the gum lancet, the bolus, or the bag and pipe, while it suggests to him a little caution in these somewhat coarse though most popular remedies.

15th. And lastly, if I have not succeeded in pointing out any one remedy which stimulates the cerebral without exciting the spinal system, it is because few, if any, such are known. It is a subject of investigation well worth attention. And if no particular plan of treatment has been announced, which can be unhesitatingly recommended, I am perfectly satisfied if I have created any doubt as to the course which at present is too unhesitatingly followed. I think, at least, something has been done to show how much more constitutional these affections are than is usually supposed, and thus to open up new plans for prevention, if not for cure. And, if in acute mania, in puerperal insanity, in delirium tremens, in chorea, in laryngismus, and may I add in epilepsy also, empiricism or the influence of authority has induced us to abandon antiphlogistic treatment and to adopt stimulant and soothing remedies, I do not despair of a sounder pathology soon prevailing in regard to this whole class of affections, and of the discovery yet being made, that they are much more amenable to treatment than has hitherto been supposed.

* Falconer on the Influence of the Passions, p. 100.

† Lectures, edited by T. G. Thomson, p. 572.

## Art. 25.—*On Muscular "Tic."* By Dr. Marshall Hall.

(*Lancet*, Dec. 4, 1852.)

In stammering and in chorea, *voluntary* movements are rendered irregular and grotesque by *emotion* or *spinal action*. In the movements in the muscular tic, of which the author treats, the movements themselves, however inordinate, are *voluntary*.

This tic frequently affects the eyebrows and eyelids. In one patient the *eyebrows* are drawn violently upwards every minute. In another there was equally violent *winking*.

One gentleman has a *nasal* tic. One gentleman of fortune kept continually and frightfully rolling and lolling the *tongue*. Another closes and *grinds* the *teeth*, until the masseter and temporal muscles ache with the continual and violent action.

The author was consulted the other day in the case of a patient who distorted the *face* and thrust forth the *hands* and *arms* in the most violent manner, rendering herself a spectacle to every bystander. It was by some thought to be chorea.

Some boys and girls have tics which prove so persistent as to continue through life. Protrusion of the chin to one side; a shake of the head; and a variety of grimaces are of this kind. One person "*hitched up*" the trousers continually.

One patient pressed the knuckle of the fore-finger to the upper teeth until a *corn* formed upon it.

A frequent form of tic—for it belongs to these peculiar and abnormal voluntary actions—is the habit of *biting the nails*.

By intense attention, and by a firm volition, these movements may be arrested and suspended. But as these acts of the mind become wearied, the tic returns.

The emotions and the irritations augment the disposition to the tic and the actions themselves. Quiet, and improved health, and gentle occupation, are amongst our most important remedies.

The prognosis is unfavorable in regard to cure, but favorable in reference to ulterior consequences. The author has rarely known these tics to disappear; but there is no disposition to permanent spasm or paralysis, as in epilepsy or chorea.

The muscular tic becomes a sort of want or necessity. The author offered a bribe to one little patient if he would not, within a certain space, shake his head. He obtained the prize, but with the utmost difficulty.

It is a great question whether any *notice* should be taken of these tics; or whether they should be left to wear themselves out, if that event may be hoped for.

The study of the various voluntary, emotional, and spinal actions, is most interesting, and most important in a diagnostic point of view. Voluntary motions not only sometimes assume an abnormal form, but are in other cases affected with a peculiar *paralysis*. This is frequently seen in hysteria, constituting indeed some of its most remark-

able forms—a fact for the detection of which the author thinks the profession deeply indebted to Sir B. C. Brodie.

Such is hysteric paralysis. But there is still another form of muscular condition, which consists, not in *tic* or movement, but in *constant* contraction, voluntary in its essence. This affection obtains in some cases of paralysis agitans; the hand is perpetually closed, the arms rigid, and when the patient rises from his seat, it is without movement or flexion at the various joints. He is all "of a piece," as it were. Yet there *is* the *power* of opening the hand, flexing the limbs, &c., that is, of relaxing the muscular effort which bound his limbs in rigidity.

How much does the whole subject of the Nervous System and its Diseases still require investigation!

## Art. 26.—*On the Influence of Posture in the Treatment of Epilepsy.* Dr. Marshall Hall, f.r.s.

(*Lancet*, Dec. 18, 1852.)

We have only to raise one hand and arm high above the head, and allow the other to hang down, for a minute or two, and then bring the hands together and compare the syncopal condition of the former with the apoplectic condition of the latter, to form an idea of the influence of posture in the treatment of diseases consisting of affections of the circulation, especially that of the head.

The author believes ordinary syncope may pass into fatal sinking if the raised posture be continued.

He believes that simple apoplexy may become deeper and deeper, simply from the opposite course of retaining the patient in the recumbent position.

Sleep, which is a sub-apoplexy, may pass into epilepsy or apoplexy, solely from the fact of a recumbent position. As a preventive of epilepsy and apoplexy during sleep, it is of the utmost moment that the patient should habitually repose with the head and shoulders much raised. For this purpose both bed and mattress should be raised by means of a bed-chair, or triangular cushion, and the patient be prevented from gliding down in the bed by means of a firm bolster, four inches in diameter, placed under the sheet, under the front of the ischia. The trunk should be raised to an angle of 45° or 50°.

In this manner the encephalon will be less oppressed with blood, the sleep will be lighter, the disposition to epilepsy or apoplexy will be diminished.

This should be the patient's habit during the rest of life.

There are two other circumstances in which attention to posture is most important.

The *first* is the condition of the patient after certain fits of epilepsy, the respiration being impeded by *rattles* in the throat. The posture should be much raised; but besides this, it should not be such that the saliva may *fall* into the fauces. The stupor and insensibility prevent the patient from swallowing. The saliva, therefore, if a just position be not adopted, accumulates and falls into the fauces, and a throat-

rattle and dyspnœa, painful to witness, and dangerous to life, are the consequence. The posture of the patient should be such as to allow the saliva to flow out of the corner of the mouth. In one case such a change of posture relieved the patient immediately.

The *second* case requiring extreme attention to the posture of the patient is that of *Syncopal Epilepsy*, or that form of epilepsy in which there is ghastly pallor of the countenance and other signs of syncopal affection. The patient should be placed with the head *low*. If this be not done, the syncope may be speedily fatal, an event which actually occurred in an interesting case a few days only ago.

The patient was no other than Ann Ross, on whom Mr. Anderson had performed the operation of tracheotomy. Her fits had changed from those of the epilepsia *laryngea* to the abortive form. The reader may remember that the patient's age was thirty-six; that her case was hereditary, her father having been epileptic; and inveterate, her fits having recurred during twenty-four years; and that she herself was thin and pallid. She was seized with syncopal epilepsy; was laid on the bed, and expected to recover as formerly; was left; and was at length found to have expired! A low position and proper attention might have saved the poor creature's life.

It need scarcely be observed that what has been said of epilepsy applies to many other diseases. It is the *principle* of position the author wishes to enforce; a principle the importance of which he believes to be still greater and still more extensive in application than is generally imagined.

ART. 27.—*The Series of Nervous and other Cases in which Tracheotomy or Tracheotony may be required.* By Dr. MARSHALL HALL, F.R.S.

(*Lancet*, Nov. 13, 1852.)

I. *Cases of Paralytic Laryngismus:*

1. *Apoplexy of Inorganic Origin.*
2. *Coma after Epilepsy.*
3. *Deep Intoxication.*
4. *Severe Narcotism;—each combined with formidable stertor threatening life.*

II. *Cases of Spasmodic Laryngismus:*

1. *Epilepsia Laryngea, threatening life or intellect.*
2. *Epilepsy with Torticollis, with the danger of suffocation.*
3. *Infantile, and*
4. *Puerperal Convulsion.*
5. *Hydrophobia.*
6. *Tetanus.*
7. *Pertussis threatening Convulsion or Hydrocephalus.*
8. *Laryngitis.*
9. *Ulceration of the Larynx.*
10. *Certain Cases of Cut-throat.*
11. *Diseases adjacent to the Larynx, as—*

1. *Tumour.*
2. *Aneurism.*
3. *Cynanche Tonsillaris.*
4. *Scarlatina, Variola,—with paroxysms of Laryngismus.*

12. *Choking, from—*
    1. *A Foreign Body in the Larynx or Trachea.*
    2. *A Foreign Body in the Pharynx.*
    3. *A Mass of Food in the Pharynx.*
    4. *Inhalation of Acrid Vapour.*
    5. *The Attempt to Drink Boiling Water.*
    6. *Swelling following the Attempt at Suicide by Strangulation, &c. &c.*
13. *The Poisonous Effects of Strychnia, &c., threatening Suffocation.*

III. *Cases of Permanent Laryngismus.*
1. *Œdema of the Glottis.*
2. *Laryngitis.*
3. *Other Diseases of the Larynx, or*
4. *Of the adjacent Tissues.*

To these cases may perhaps be added—

(IV. *Cases of Asphyxia:*
1. *Drowning.*
2. *Hanging.*
3. *Suffocation from Mechanical Causes.*
4. *From Breathing Irrespirable Gases, &c. &c.;—the object being efficient artificial respiration.*)

From this table it will be sufficiently apparent that the subject of tracheotony or tracheotomy is one of vast and vital importance, requiring the utmost attention from our best physicians and surgeons, and not likely to be exhausted by the superficial observer and thinker. Dr. M. Hall commends it to the earnest inquirer.

The author concludes this *note* by a question or two:—

1. What is the *abortive* form of malady left by tracheotomy in the various *convulsive* diseases?

2. What would be the *abortive* form of malady left by tracheotomy in formidable cases of *pertussis?* &c. &c.

It is scarcely necessary to repeat, that it is *not* for apoplexy, *nor* even for epilepsy, that the author has recommended tracheotomy: *but*—for *laryngismus.* He has now shown that the recommendation is of vast extent, as it is also of vital interest. Time, and great experience and observation, will be required to define the limits and the precise circumstances of its just application. But it will be admitted already that a new field of medicine and surgery has been opened to the physiological and practical physician.

ART. 28.—*On the questionable utility of Tracheotomy in the treatment of any kind of Epilepsy.* By Dr. RADCLIFFE, Assistant-Physician to the Westminster Hospital.

(*Lancet*, May 14, 1853.)

In order to arrive at a proper decision upon this question, I have

deemed it desirable to collect the cases in which Dr. Marshall Hall's views have been tested practically, and submit them to the judgment of the profession; and this more particularly as the reviewal of this evidence has led me to adopt the title which heads this paper. With this object, therefore, I beg to present these cases and a few comments arising out of them.

*Mr. Cane's Case.*—The patient was a boatman, aged twenty-four, who had been epileptic for seven or eight years. The fits were severe and frequent. The operation was performed during a fit, in consequence of a state of asphyxial-coma that had lasted nineteen hours. The relief was immediate, and no fits have followed the operation. The habits of the patient were very irregular and intemperate, and he was discharged from his employment on this account about ten months ago. The tube is still worn, and curiously enough, it is worn with a cork in the opening.

*Mr. Anderson's Case.*—The patient in this case was a stout, thick-set, muscular female, æt. thirty-six, the daughter of an epileptic father, and herself epileptic for twenty-four years. Her complexion was ruined by the former use of nitrate of silver. The operation was performed in March, 1851, and the tube was worn until her death, which happened in a fit about four months ago. After the operation the fits continued as before—possibly a little less frequently and severely, but decidedly of the same character. Her health and spirits also are said to have undergone some slight improvement, and she lost a numbness in the right arm which had previously distressed her, but those who knew her best doubt the existence of any appreciable change of this kind until about two or three months before her death—sixteen months after the operation. The following notes of the final seizure are from Mr. Anderson.—"Eight A. M.: Had been up and dressed; heard to fall heavily. A woman removed the inner tube from the trachea as she was in a fit apparently more severe than usual. She 'snorted loudly;' nails of a deeper colour. She was placed on the bed as the woman thought she would recover as usual." The woman here referred to says the patient was black in the face and violently convulsed, and that death must have taken place within ten minutes. The body was examined twenty-four hours after death, and the following are the particulars supplied by Mr. Anderson: "Body extremely muscular; cadaverous rigidity still present; not much fat.—Head: Vessels of scalp much congested; skull thick, and dura mater so universally adherent that the skull-cap could not be removed until the dura mater was divided. The sinuses were filled with dark blood, and on the removal of the brain an unusual quantity of dark blood flowed from the spinal canal. On either side of the longitudinal sinus, and on the inner side of the frontal bone, two or three growths of bone were found, and to these the dura mater was so firmly adherent that on attempting to separate it, it was torn through, and portions remained attached. The largest of the exostoses was about an inch and a half in circumference, and projected about half an inch from the surface of the bone. No alteration was observed in the corresponding portion of the cerebrum. The brain was softer than natural, and the puncta were more than usually distinct. There was little fluid in the ventricles, but the choroid plexuses were congested.—Lungs: These organs were collapsed, occupying but little more than a third of the thoracic cavity, and somewhat congested at their posterior margin; structure healthy—Heart: Larger than usual (perhaps a fourth); cavities, especially the left, distended with blood. It was surrounded with fat, and its structure flabby;* valves healthy.—Liver, kid-

* Dr. Jenner examined a portion of this heart microscopically, and found some slight degree of fatty degeneration.

neys, and spleen: Highly congested.—Uterus natural, but cysts containing viscid fluid in the ovaries.—Small intestines (especially lower part of the ilium) congested, and the mesenteric glands enlarged.—Internal jugular, above the level of the omohyoid, almost empty.

*Mr. Mackarsie's Case.*—R. W—, aged forty, and epileptic for twenty years. Latterly the fits have become much more frequent and severe, the subsequent torpor much prolonged, and the mind much impaired. His complexion had a congested, mahogany-like tint. Two years previously he had had two attacks of paralysis, but his present health, apart from the fits, is pretty good. Tracheotomy was performed on the 24th of August, 1852, by means of the tracheotome. On the day following the operation inflammatory action began in the lungs, and continued until the 6th of August. Thus,—August 25th: "A large quantity of mucus has passed from the tube." 26th: "The patient has been hot and feverish, and passed a restless night; tongue furred; pulse 100; a large quantity of mucus passing through the tube." 27th: "Pulse 100, full and hard." 28th: "Tongue still furred." 31st: "Violent hæmoptysis." Sept. 1st: "Violent return of hæmoptysis; left lung congested, dull on percussion, and respiratory murmur feeble." 2d: "Expectorates bloody mucus; dulness on percussion not so marked; respiratory murmur more audible." 3d: "Still bloody expectoration." 4th: "Pulse 90 and soft." 6th: "Pulse 75, soft; respiration free; dulness on percussion gone." Again, on the 20th of September, and for some days afterwards, there was feverishness, attended with bilious vomiting, and requiring salines, calomel, and prussic acid. The fits, however, kept away until the second week in October, when four or five slight ones happened. After this, true fits made their appearance, and continued to recur with their usual frequency, though in a mitigated form, until about two months ago, when the tube was withdrawn by the patient's wife, (who throughout has been greatly opposed to, and dissatisfied with the operation,) since which time the fits are as bad as ever, and the mental condition worse than ever. Mr. Mackarsie is of opinion that during the time the tube was in the trachea the mind was more active, the complexion less congested, and the fits less severe, though there was no alteration in the subsequent sopor.

*Mr. J. A. Lockhart Clark's Case.*—In this case the patient was a female, twenty-three years of age, who had been epileptic for twelve years. The fits were very violent and very frequent. Laryngotomy, not tracheotomy, was performed about three months ago, and the tube worn until recently, when it was removed, in consequence of their being no perceptible alteration either in the frequency or in the severity of the fits.

*Mr. Henry Thompson's Case.*—The main facts of this case are substantially these: the patient was an epileptic of twenty years' standing, whose intellect had suffered considerably. Tracheotomy was performed nearly three months ago. Before the operation the fits were frequent and violent, and the subsequent sopor prolonged; since the operation the fits have altered little in frequency and violence, but the subsequent sopor is greatly abridged. The general health also is improved, and the mind clearer than it was.

*Dr. Tyler Smith's Case.*— Sarah B—, the wife of a game-keeper at Debden in Essex, and the mother of four children. She has been epileptic since puberty, and chiefly about the menstrual period. The numbers of the fits during the month were sometimes as many as twenty, but generally not more than five or six. The fits themselves were usually preceded by the scream and attended with much lividity of the head and neck; the convulsions were very violent and the subsequent sopor protracted. The mental state was one of great inanity. There had been several paroxysms of insanity, and twice the patient had been in a lunatic asylum. During the month that she remained

in the hospital before the operation there were nine fits; during the month after the operation there were five fits. The operation itself was performed on the 13th of February by Mr. Lane. On the 15th, 16th, and 17th, she was restless, wakeful, and unruly, with heat of skin, raised pulse, and furred tongue. She threw a glass at the nurse, and persisted in attempting to withdraw the tube from the neck, and her state required constant watching. Three weeks after this time she was greatly depressed, her pulse feeble and wretched, her countenance anxious, and much viscid, fetid phlegm passed from the tube; and this state continued for the greater part of a week. Since this time she has rallied, and now her mental condition is much better than it was during the month before the operation; her fits also are less severe, the period of sopor is lessened, and the cry is lost; but still the convulsion is violent, the venous turgescence of the head and neck considerable, though less than it was, and once at least the tongue has been bitten.

*Dr. Andrea Verga's Case.*—This case cannot strictly be classed with the former cases, for the operation was performed unintentionally, and by the patient himself; but in all other respects it fulfils the required predicaments. It was originally reported in one of the Lombard journals, and copied thence into an early number of Schmidt's *Jahrbuch* for 1852. The main particulars are the following: A. B—, aged twenty-five, was admitted into the great hospital at Milan, with his throat cut and his genitals severely mutilated, in consequence of a determined attempt at suicide. Six months afterwards the wounds had healed, with the exception of a free fistulous opening in the trachea; but the fits and despondency had undergone no change. The breath passed freely in and out of the artificial opening, and the fits recurred with equal frequency and force whether that opening were closed or not. In this state he was removed to a madhouse, and there he remained for three years, when he died of tabes, the fistula continuing open and the fits unabated up to the end. After death the brain and skin were found congested and the bowels somewhat ulcerated.

*Comments.*—Such are the clinical data upon which as yet the remedial value of tracheotomy in epilepsy has to be tested, and the question is whether or not they realize Dr. Hall's expectations, and justify the comments which have been passed upon them.

What of Mr. Cane's case? Here undoubtedly the results seem most marked, but do they not prove too much? There are no fits whatever after the operation, and this is not to be expected even on Dr. Hall's own premises. Moreover, fits do happen in all the other cases, and in some of them very severe fits, and this fact gives a probability of at least seven to one that the fits in this case did not keep away in consequence of the operation. It is to be remembered, also, that the wearing of the cork in the tracheal tube did in fact place the patient in the same predicament as that in which he was before the windpipe was opened. Why the fits kept away it is not necessary to inquire, for nothing is more certain than that epilepsy may suddenly disappear, and keep away for a long time, without any apparent cause.

What of Mr. Anderson's case? Here the main questions are as to the character of the fits, the state of the general health, and the cause of death. Were the fits improved in character? Possibly, but not probably. Dr. M. Hall, in his lectures at the College of Physicians, allowed that a fit had followed very shortly after the operation, in which the tongue had been bitten. A Mrs. Dwellie, living in the adjoining garret to the patient's, and who frequently went to the

patient's assistance when she heard the noise and struggle of the fit, states explicitly that the convulsions were as frequent and violent, and the subsequent sopor as prolonged, after the operation as before it. A Mrs. Smith, also, an aunt of the patient, who had known her from childhood, and who saw her several times a week during the whole of her life, makes the same statement. Miss Lewis, on the contrary, who lives on the first floor of the house in the garret of which the patient lived, thinks the fits, after the operation, were not so severe or frequent as before it; but why she thinks so is not very evident. She saw her in but few fits, and in none (there is reason to believe) from the commencement. Indeed it is to be understood that this witness was infirm and half-crippled, and often quite an invalid; that she had to be fetched from the top of the house, and then to mount up two flights of stairs before she could get to the place where the patient was; so that the fit must have been far from its commencement before she could see it. The last fit, also, which was evidently of great violence, is spoken of only as "apparently more severe than usual," showing that the ordinary fits were severe, and the patient was "expected to recover as usual," showing that death occurred unexpectedly in what was regarded as an ordinary fit. Concerning the state of the general health there are two opinions. Miss Lewis says this was better; Mrs. Dwellie and Mrs. Smith say there was no perceptible improvement until within two or three months from her death, fifteen or sixteen months after the operation. The cause of death is very obscure. It could not be, however, from the strangulation of laryngismus, for the inner tube was removed at the beginning of the last fit, as it was in all the fits in which the patient was watched. Indeed there was never any neglect or mismanagement about the tube, (which reflects the highest credit on Mr. Anderson's mechanical ingenuity,) and the patient herself had so schooled herself to it that she could remove and cleanse it, and did so remove and cleanse it many times a day. The fatty state of the heart, as Dr. Hall supposes, might have had something to do with death, for death happened shortly after the commencement of the seizure; but, on the other hand, it is not to be forgotten that there was stertorous breathing, blackness and turgescence of the head and neck, with distended sinuses, distinct cerebral puncta, and other signs showing that death might have been caused by coma.

What of Mr. Mackarsie's case? Here it is not difficult to imagine that the pulmonary inflammation and the subsequent febrile action may have had something to do with the absence of the fits during the first two months after the operation, for inflammation and fever are not only uncongenial to, but incompatible with epilepsy. This inflammation, also, even after its cessation, may have had something to do with the amelioration of the fits, by acting derivatively in regard to that mischief in the brain, the existence of which is to be argued from the two former attacks of paralysis. The fact, however, is not to be doubted—that the fits were "mitigated" and the mental state ameliorated after the operation. This is undeniable. Still the fits were true fits, and not mere warnings, and there is little if any reason for supposing that they gave up the characters of epilepsia gravior for those of epilepsia mitior; nor is it clear that the mind was not invigorated by hope or some other

psychical stimulus, and that the fits were not subdued by the mind thus invigorated, the tracheal tube all the while acting merely as a charm by which to propitiate hope and her allies; nor is it clear that any diminished sopor after the fit may not have been the consequence rather than the cause of the mental invigoration. Time must elapse before these doubts can be resolved, and in the meantime it must not be forgotten that the wife of the patient was dissatisfied with the operation.

What of Mr. Clark's case? Nothing favorable to the operation.

What of Mr. Henry Thompson's case? In this case the fits recur as frequently as before, but the subsequent sopor and intermediate stupor are greatly diminished. Still it is by no means certain or even probable that the fits after the operation were of the character of epilepsia mitior, or that the diminished sopor and stupor were not the consequences of faith in the operation rather than of the operation itself.

What of Dr. Tyler Smith's case? In this case it is more than improbable that the fits underwent that modification which they ought to have done, or that any improvement in the symptoms is really due to the operation. All the fits after the operation were certainly not of the type of epilepsia mitior, for the convulsions were severe, and once at least the tongue was bitten. It is doubtful also whether the fits were really less frequent. During the first month of hospital life there were, it is true, nine fits, but this was a time when the patient was exposed to the agitating publicity of a hospital ward, with the fear of an operation before her eyes. The usual number of fits during the month would also seem to be from five to six, though occasionally ranging so high as twenty, and these numbers correspond with the numbers after the operation. It is clear also that as yet little can be said about mental improvement after the operation, seeing that a paroxysm of insanity and a week of extreme mental inanity form a part of this period. This being the case, it is not necessary to speculate whether such improvement is psychically or somatically the result of the operation.

What of Dr. Andrea Verga's case? Possibly very little, but certainly nothing in favour of the operation.

On looking over these cases, therefore, one conclusion is inevitable —namely, that severe fits have followed the operation—fits in which the tongue has been bitten, and one fit in which death has happened. Almost uniformly the convulsion has been as bad as ever. In Mr. Anderson's, Mr. Clark's, Mr. Mackarsie's, and possibly in Dr. Andrea Verga's cases, the sopor after the fit, and the torpor between the fits were unaffected; in Mr. Henry Thompson's and possibly in Dr. Tyler Smith's cases, they were relieved, though *how* they were relieved remains a matter of doubt. As judged, therefore, by the results of the cases in which it has been practically tested, the utility of tracheotomy in epilepsy would seem to be extremely doubtful; so doubtful, indeed, as to render it a matter of paramount and imperative necessity to pause and ponder well upon the evidence before again resorting to it, and this all the more because it is by no means certain that the remedy is not more dangerous than the disease, and because the inevitable result of

the operation is to convert the patient into a dumb, whistling wretch, whose every breath is an annoyance to himself and others. In order to do this it will be necessary to examine epileptics, whose windpipes are sound as well as those whose windpipes are not sound. It will be necessary to determine how much of the epileptic asphyxia depends upon spasmodic "setting" of the whole chest, and how far this "setting" will negative the results of an opening in the windpipe. It will be necessary to go to the root of the matter, and determine whether, apart from organic disease, the larynx does close spasmodically in epilepsy, and whether such closure can exist at the time of life when epilepsy happens. In the meantime the absence of any stridulous inspiration in epilepsy, such as is heard in laryngismus stridulus, in hooping-cough, and in certain organic diseases of the larynx, would seem to be a serious, if not fatal objection to the existence of laryngismus in epilepsy. The age of epileptics—namely, youth and manhood—is also an objection to the same effect; for judging from the history of laryngismus stridulus and hooping-cough, pure spasmodic closure of the larynx is confined to the period antecedent to that at which epilepsy commences; indeed, as a rule, laryngismus stridulus is an affection of teething, and hooping-cough loses its characteristic hoop before puberty. This deduction is also borne out by the results which follow the division of the laryngeal nerves in dogs and cats; for in these experiments the young animal is immediately suffocated by the closure of the glottidean chink, whereas the old animal goes on breathing without any evident diminution in the current of air.

### Art. 29.—*On Cotyledon Umbilicus in Epilepsy.*

By (1) the late Dr. Graves; and (2) Dr. Grieve, of Dumfries.

(1. *Dublin Quarterly Journal of Medical Science*, Nov. 1852.—2. *Lancet*, Oct. 1852.)

The following cases illustrating the influence of Cotyledon Umbilicus in Epilepsy, are taken from a paper on the nature and treatment of Epilepsy. From them, Dr. Graves argues that this remedy is capable of materially aiding our curative efforts in certain varieties of the disease, but we are afraid that this will not be the universal conclusion, seeing that the remedy fails in three out of six cases, and only partially succeeds in a fourth:—

Case 1.—*Epilepsy of several years' duration cured by the Cotyledon.*—Mr. J. M—, now aged 22, had an attack of measles in 1847, followed in four months by a slight fit of epilepsy at night. The epileptic seizures soon became more violent, and finally recurred at intervals, seldom longer than two or three weeks. In March, 1849, he was placed under the care of Dr. —, of Castlebellingham, who had him leeched frequently behind the ears, and gave him at first aperient, and subsequently tonic, remedies. This course of treatment having been tried for six months, without any benefit, he was then removed to Belfast, where he consulted another physician, who ordered sea-bathing and shower-baths, which were persevered in for half a year without the least improvement. In January, 1850, he was advised to come to Dundrum, near Dublin, when Mr. White gave him a fourth of a grain of iodide of silver three times a day, and established a perpetual blister on his scalp. After

these remedies had been continued for five weeks, he got scarlet fever, for some months after which he remained free from his former ailment, and his parents flattered themselves that he was cured. In June, however, the epilepsy recurred as severely as ever, and, consequently, he again solicited Mr. White's advice, who, finding that the severity of the disease was unmitigated, consulted me on the 12th of July, the patient having experienced an unusually violent seizure on the preceding day. I advised the exhibition of the extract of cotyledon umbilicus in five-grain pills, three to be taken three times a day. These pills were continued for two months, when, as there had been no recurrence of the fits, we ordered him to have two pills three times a day, and at the end of two months, the fits not having reappeared, we were enabled to diminish the dose to one pill; and at the end of six months all medicine was discontinued, and he has continued ever since, a period of more than two years, quite free from the complaint. I should have mentioned, that there is nothing in this gentleman's appearance indicative either of plethora or debility.

Case 2.—*Frequently recurring Epilepsy in a boy of four years old, cured by Cotyledon umbilicus.*—This boy, of full habit and very nervous temperament, had been subject to epilepsy for more than a year, when I was consulted about his case by Mr. Pakenham, of Henry-street. The disease had latterly become much worse, the fits returning several times in the week, and often followed by excitement of an almost maniacal character. I prescribed a treatment directed against the tendency of blood to the head, and carefully attended to the state of the stomach and bowels, while great attention to diet, and removal from everything exciting, were strongly urged by me, and by the parents rigorously enforced. After some continuance of this general preparatory course, we had recourse to various anti-epileptic remedies, a succession of which was unavailingly tried for many months; and it was not until our patience had been worn out, and all hopes of a cure abandoned, that it occurred to me to try the extract of cotyledon umbilicus. The good effects of this remedy were very striking, and after it had been persevered in for a few weeks, the child's health was perfectly restored. On one or two subsequent occasions a relapse took place, which was speedily cured by the cotyledon, and the boy has remained robust and free from all nervous symptoms for two years.

Case 3.—*Recent Epilepsy in a young man: Exhibition of Cotyledon umbilicus without any benefit.*—During the summer of 1851 the eldest son of a gentleman of rank was placed under my care. He was twenty-three years of age, and had been quite healthy until within a few months previously, when the epileptic seizures commenced, and, as usual, first attacked him when asleep. Since that time he has had a fit every three or four weeks, and but once only during the daylight. The short duration of the complaint previously to his being submitted to treatment rendered me sanguine as to the beneficial effects likely to be produced by the cotyledon, and accordingly I commenced its exhibition with much confidence. I was, however, disappointed; for although the extract used had been carefully prepared, and the patient was most regular in taking the medicine, yet not the least advantage was gained. He at length became discontented, and had recourse to other advice, with what result I know not.

Case 4.—*Epilepsy of long standing; Partial relief from the use of the Cotyledon.*—A young woman, residing in Mitchelstown, had been for several years subject to epilepsy. The fit, as is frequently the case, recurred at nearly regular periods of seven weeks, and then the first and severest attack was succeeded, during the following five or six days, by three or four fits of less intensity.

This periodicity of epilepsy has been noted by many authors, but no one

that I am aware has pointed out the important consequences to which it manifestly leads. A close attention to the effects produced by medicines in periodic cases has led me to the discovery of the following rule in practice.

The general and constitutional management of such patients must be persevered in at all times, and without reference to the periods; *but the specific treatment*, i. e. *the exhibition of remedies calculated to abate the violence or avert the occurrence of the fits themselves, must be limited to the eight or ten days which precede that period.* If they are continued during the whole interval between the groups of fits, the constitution inevitably becomes accustomed to their influence, and when the time of need arrives they are powerless. On a former occasion I adduced proofs that this rule applies to the treatment of obstinate ague relapses with sulphate of quina.

But to return to the case in hand. The young person in question, having previously tried various medicines, took the cotyledon according to my rule, and with the manifest good effect of delaying the next period at least four weeks, and diminishing the violence of the fits. Whether anything like a permanent cure would have been brought about by a steady perseverance, I am unable to say, as the patient's means did not enable her to procure more of the extract.

Case 5.—*Epilepsy, both in a regular and irregular form, occurring in a young man; not relieved by Cotyledon.*—A youth of 18, with a strong hereditary tendency to scrofula, had a severe strumous affection of the knee six years before; after the subsidence of which he enjoyed good health, until he attained the age of 16. He was then attacked with an anomalous form of epilepsy, whose origin he traces to a vicious habit contracted at school. In addition to the ordinary convulsive fits, which usually came on at night, he is subject during the day to a singular nervous affection. This attacks him frequently when he is quietly sitting by the fire, and only lasts for a few seconds, during which he is unconscious, but seems to stare at those around him, and sometimes whirls himself about on his chair, or rises up and walks a few steps in a hurried manner; at other times he raises his legs suddenly while he is seated, and sweeps them along the table. All the remedies of most character, and among them the cotyledon, were tried in vain in this case.

Case 6.—*Epilepsy; Failure of the Cotyledon.*—A girl, aged 13, is subject to occasional attacks of epilepsy at night, but they occur only at very distant periods. The most remarkable feature in her ailment is the derangement of the nervous system exhibited during the day, which consists in sudden but very transient fits of unconsciousness, which seize her three or four times while awake. If the fit comes on while she is walking, she generally stops, and appears to stare anxiously; sometimes she walks on.

In this patient the cotyledon entirely failed.

The experience of Dr. Grieve is decidedly unfavorable to the cotyledon:

"We no longer live," he says, "in a rude, but in a very credulous age, every succeeding year ushering in its new remedy for incurable diseases, which, though not so revolting as of old, are, I fear, of equal ineptitude. This remark applies to many of the therapeutic agents lately vaunted for their efficacy in the treatment of epilepsy. Among many others, we have the cotyledon umbilicus, or common navel-wort, which grows on our rocks and old walls. This herb being introduced to the notice of the profession on respectable authority, I was induced to give it a fair trial in six cases of epilepsy, taking due care that the medicine was genuine, and prepared by the best chemists in London, and, I regret to add, without the slightest evidence of its having exercised any be-

neficial effect whatsoever on any of my patients; so that I am constrained to regard the navel-wort as an useless weed, to be ranked with the mistletoe of the oak, lady's-smock, biting stone-crop, and other "frivolous things," not to speak of the warm blood of the gladiator just slain, the dung of birds, the hoofs of quadrupeds, and other *delicacies* of a by-gone age.

## Art. 30.—*Case of Hidden Seizures followed by Epilepsy and Mania.* By Dr. Marshall Hall.

(*Lancet*, Jan. 8, 1853.)

The following case is full of practical interest: —

Mr. D—, "æt. 53, engaged in business pursuits and calculations from an early age . . . . enjoyed excellent health until October, 1848, when he frequently complained of declining health, for which he had taken country lodgings, exercising himself a great deal by sea-bathing, and walking four or five miles before breakfast, by order of his doctor, who considered that he required pulling down." Mr. D— often complained of "his tongue and lips, which were sore, but from what cause he never could discover, nor did any one even suspect what his disorder really was" until his marriage. This took place in February, 1841, and "about three nights after, Mrs. D— observed that in his sleep he had a slight fit. These fits came nearly every night, but for some weeks only one during the night. . . . . Becoming more severe, they returned every fortnight for some months, and were six or seven in number, until the last attack, (June, 1852,) when he had ten severe fits through the night, and bit his tongue severely." No one had observed these attacks but Mrs. D—, as they had always occurred during the night. The fits are always preceded by "a sort of smacking noise made by the lips and tongue, sometimes by a scream; the lips then turn purple, and the face deadly pale; he stretches out his legs perfectly stiff; his fingers are clenched, and his features quite distorted; his eyes turned up; he bites the right side of his tongue and lips, and his mouth bleeds from the bite, but never foams; his neck is quite stiff, and he is perfectly insensible of uncontrollable evacuations. After the fit goes off, a cold perspiration breaks out over his head and face, and he falls into a deep sleep, with heavy breathing, which lasts about an hour, when another fit comes on, and so on through the night. The whole day after he sleeps, and if he does awake, his eye is dull, and his mind appears unsettled. His memory has been greatly affected, things of yesterday appearing like years ago. He complains of little or no headache, unless the attack has been very severe, and even then it soon passes away. For days after an attack his spirits are very low, and he is in a state of great despondency, but he is naturally of a very nervous, anxious disposition. The day before an attack he is generally irritable about trifles, and unhappy; although occasionally he is quite the reverse, being sometimes in high spirits."

A subsequent letter contains an account of some interesting phenomena:— "Yesterday, being exactly a fortnight since the last attack, Mr. D— dined at three o'clock, being not very guarded in what he ate, and drinking a little brandy in cold water. Immediately after dinner he lay down on the sofa, when a fit came on; he turned very pale, and his lips purple, but beyond a slight twitching of the mouth and fingers, he had no convulsions. When sufficiently recovered to walk, he went to bed; he had then three fits (about half an hour between each) exactly like the first, *without* (general) *convulsions*, and all this time he was lying upon the *left* side. After the fourth fit he turned over on his *right* side, when he was seized almost directly *with severe convulsions;* and as the fit went off he slept a little, and moved again to his *left*

side. When in this position he had another fit *without convulsions.* This was at nine o'clock, after which he slept quietly, lying in the same way till between three and four on the following morning, when he again turned over on his *right* side, and soon after had another fit, *with severe convulsions,* beginning with a loud shout. This was the last, and, after a good sleep, he appeared almost as well as usual, quite collected, and complaining only of occasional shooting pain in the head."

Soon after this letter was written, Mr. D— "became quite delirious, and on the following morning was in a fearful state of insanity—violent in the extreme, and obliged to be placed in a private asylum. He slept for the first time last night (three nights having intervened), and now eats heartily, but reason appears quite gone, though he is quiet and childlike. This is the termination of his sad disorder! His mouth is filled with a small white blister; altogether he appears in a most fearful state." At this time Dr. Hall's opinion was that the insanity would be of but short duration. Acute mania, when the result of commencing epilepsy, is (like coma) of a transient character. When induced by long-continued epilepsy, its import is far more serious. The prognosis was correct, for, sixteen days later, "his reason has returned, although he is beginning to complain of the same pain in the head. . . . .He appears flighty and unsettled. It is now nearly three weeks since his last attack, and all the usual symptoms are showing themselves previous to another."

Two attacks have occurred since this time, but "the balance of the mind is now quite restored."

This case requires no comment to enhance its interest. I would only suggest that in the diagnosis of obscure affections of the general health, attended or not attended with anomalous symptoms of disturbance in the functions of the nervous system, the greatest care be taken to ascertain whether any "*hidden seizures*" have occurred; and that for this purpose, and with a view to their discovery, the closest scrutiny is required of all the morbid phenomena: for example, the state of the tongue and lips, and of the pillow on which the patient has slept; and, if possible, the sleep should be watched, (not for the purpose of diagnosis, but, as Dr. Hall has suggested, to prevent it from becoming too profound, by the judiciousness of a well-trained and trustworthy attendant,) and thus to ward off the attacks.

The *posture* of the patient in this case appears to have borne some definite relation to the severity of the attack. This affords another hint for the observation and treatment of such diseases.

The *state of mind* prior to the attack is of great interest. Mr. D— sometimes was unusually cheerful. An intelligent child, aged nine, now under Dr. Hall's care, exclaims frequently before its seizures, "I am so happy!" The emotions require as careful attention as the diet. The nervous system must be treated, not only by means of the body, but through the mind.

## Art. 31.—*On the Influence of Day and Night upon the Fits of Epilepsy.* By Dr. Everts and Van Leeuwen.

(*Henle's Zeitschrift,* Bd. iii, Heft 1.)

This observation, which is part of an unfinished investigation into the influence of solar and lunar changes, of seasons, and of age and sex, upon epilepsy, was made upon 30 epileptic inmates of a lunatic asylum, 17 of whom were males, and 13 females. With one exception, the fits of the women were more frequent between 6 p. m.

and 6 a. m., and most frequent about midnight. The fits of the men, on the other hand, were much less regular; thus, in 4 the fits were more frequent at night, in 5 during the day, in 2 there was no difference between the night and the day, and in 6 the fits were so unfrequent that little or nothing was to be gathered from them. So far as may be gathered from this evidence, therefore, it would appear that in men the fits occur less frequently at night than is usually supposed.

## Art. 32.—*On the questionable importance of the Aura Epileptica as a symptom of Epilepsy.* By M. Herpin.

(*Medico-Chir. Rev.*, April 1853.)

These interesting remarks occur in a review of M. Herpin's work on Epilepsy, by Dr. Parkes :—

A certain number of cases, (he writes,) in which favorable opportunities occurred of studying the commencement of the attack, presented, in one or other part of the body, a kind of convulsive or tetanic contraction of muscles which immediately ushered in the fit. In one case there was cramp of the fingers of the left hand, followed by closure of the hand and flexion of the arm; two or three cries were uttered, and consciousness was lost, just as the patient fancied that the same sensation of contraction was spreading from the affected arm to the whole body. In another case there was in the same way contraction of the toes, which was so painful as to produce cries; the contraction rapidly invaded the leg, the thigh, the abdomen, and the chest; the fingers of the hand on the same side were then attacked with cramp and painful sensation, which spread rapidly up the arm to the shoulder, the side of the neck, and the face, to the vertex; when it reached this point, consciousness disappeared. From these, and other cases equally carefully recorded, Herpin draws the conclusion, that "when the symptoms of the attack are not simultaneously produced, a partial tonic convulsion precedes the cry, the loss of consciousness, and the fall."

This convulsion, rapidly passing from one muscle to another, was the only phenomenon which Herpin could discover which seemed to approach to the *aura epileptica* described by authors. He therefore entered on a critical examination of authorities, for the purpose of knowing how the term *aura epileptica* originated, and what were the phenomena it was intended to denote. The result of the examination was not a little curious. We give here simply M. Herpin's statements, as we have not been able to undertake the laborious task of examining into their accuracy.

No mention of the aura is found in Hippocrates. Aretæus describes accurately the partial convulsions which often precede an attack of epilepsy, in a passage which Herpin states has never been properly adverted to by writers on epilepsy. The first mention of the aura is in Galen,* who, in mentioning two cases in which the attack began by some kind of sensation in the extremities, which spread upwards, says that one of the patients described it as a sort "of cold vapour;" whereupon Pelops, his master, surmised that it was the propagation by continuity of some unknown alteration, or the transmission of some vapour or poison. M. Herpin shows, by a critical examination of this celebrated passage, that the original expression, *aura epileptica*, was a comparison, and that the remark of Pelops was an hypothesis. He shows also, that while Ætius merely copies Galen, Alexander of Trallus ac-

* De locis Affectis, lib. iii, cap. vii.

cepts the "cold vapour" as a reality, and Actuarius joins it to the hypothesis of Pelops, and speaks decidedly of a kind of epilepsy in which "a cold and corrupted vapour" passes up towards the head. It is, then, evident that the comparison of a sensation to a cold vapour became converted, in the hands of the successors of Galen, into an actual and potential aura. The Latin writers contain nothing on the point. Passing to the writers of the 16th century, Herpin points out that the commentators on Galen, and those who copied from them, handed down this phrase, until the existence of an aura seemed to be accepted as an ascertained fact. We shall not follow our author through his long analysis of the writers of this and of the succeeding centuries, down to the present time, but shall merely say, that if he has cited all the passages referring to the *aura epileptica*, he has made out his case—viz., that a term used on one occasion to describe a sensation has been converted into the expression of a supposed frequent phenomenon. He also shows, clearly enough, that when the aura is described from personal observation, some kind of cramp or convulsion is narrated. During the present century the term *aura* has been less frequently used, and its place has been taken by more exact descriptions of tremors, painful impressions, spasms, cramps, and convulsions. The closest observations have been carried on at the Bicêtre, Salpêtrière, and at Charleston, but any sensation corresponding to the "aura frigida" of Galen has been vainly sought for. M. Herpin finally decides that the aura is merely the first convulsive manifestation of the attack, commencing in some point distant from the brain.

The question thus raised is certainly extremely curious, and we have no doubt that the description of aura given by certain modern writers is merely an imaginary translation of Galen's term. Yet we think that the point is worthy of further investigation, especially as to the nature of the sensations felt just before the attack by epileptics, and the connection of these with muscular contractions.

## Art. 33.—*Cases bearing upon the Treatment of Poisoning by Strychnia.* By Dr. Forster, and others.

(*Lancet*, July 1852, and *Archiv. Gén.*, Feb. 1853.)

These cases are valuable contributions to the therapeutics of tetanus and convulsive diseases generally, as well as to those of poisoning by strychnia. They show the importance of one or other kind of stimulant.

*Case* 1.—S. S—, aged fifty-two, a dissolute hypochondriac, with a constitution and intellect considerably damaged, (writes Dr. Forster,) was under my care with indolent ulcers on both legs; and on account of dyspeptic symptoms, from which he also suffered, I ordered him one twelfth of a grain of strychnia, to be taken three times a day. For convenience and accuracy in dispensing, an acid solution of strychnia is kept at the Surrey Dispensary, in the proportion of one grain to an ounce of water, and this patient had an ounce and a half of that solution given him, a teaspoonful of which contained the dose required. From inattention to both verbal and printed instructions, on his return home he took rather more than an ounce of the medicine, which he had not swallowed above ten minutes when he became violently convulsed. On discovering his mistake, he immediately took copious draughts of cold water; but the convulsions increasing in severity, his friends became alarmed, and he was driven in a cab to an hospital, when, being refused admittance, he was again brought to the dispensary. An hour and a half had now elapsed since the poison was taken, during the whole of which time his attendant stated he had been violently

convulsed. When Mr. Hills first saw him, he had trismus, with the upper and lower extremities completely rigid, and paroxysmus of opisthotonos and emprosthotonos occurring alternately. A paroxysm now took place every six minutes, each one lasting about two minutes, and during the emprosthotonic condition he uttered a violent shriek. He had half a drachm of sulphate of zinc given immediately, and was sent home, and placed in a warm bed. I saw the patient with Mr. Hills about four hours after the poison had been taken, and found that he had been slightly emetized by the zinc, and had also been most violently purged. The tetanic rigidity still continued; the paroxysms were, however, less frequent; the patient could only lie on his back, and the slightest exertion brought on the convulsive attacks. The bladder also seemed to participate in the general contraction of the voluntary muscles, and expelled small quantities of urine, as fast apparently as it flowed into that viscus; the pupils were natural; the pulse small and irritable; and the whole frame was evidently much exhausted and enfeebled. He was now ordered frictions over the spine by means of soap liniment, which afforded him great relief, and half a drachm of the compound spirit of sulphuric ether in camphor mixture, to be taken internally every four hours. During the night he continued to have involuntary twitchings of the limbs, which lasted also through the following day; on the second night they became more severe, but were only of a few hours' duration, and then entirely left him. He has since returned to his work in his usual health.

The two other cases are copied from the Boston Journal of Medicine into the *Archiv. Gén. de Médicine*. The dates are wanting, and the particulars are very scanty.

*Case* 2.—A man, aged 40, swallowed accidentally about two grains of strychnia, and in a few moments was seized with violent convulsive and tetanic symptoms. His body was bathed in sweat. Different remedies were tried without avail, until chloroform was had recourse to, when in a few minutes the convulsions went off, and the spasms relaxed. The inhalations were repeated at intervals for four hours, and the patient was perfectly well in a few days.

*Case* 3.—J. W—, a piano-forte maker, who was taking strychnia medicinally, in consequence of a blunder in the strength of his mixture, took a sixth instead of a sixteenth of a grain. The first dose caused considerable twitching and painful contractions in the muscles; the second, violent convulsion. The mistake being found out, 5 grains of camphor were given, and the result was that the tetanic symptoms subsided immediately, and no second dose was required.

## Art. 34.—*Case of Traumatic Tetanus cured by Chloroform.* By Dr. Dusch, of Mannheim.

(*Henle und Pf. Zeitsch.*, N. F. iii, 1, 1853, and *Schm. Jahrb.*, No. 4, 1853.)

This case occurred in May 1852, in a man 26 years of age, in consequence of an injury to one of his toes by a nail. On the 6th of May the symptoms of tetanus were complete, with fits of opisthotonos occurring every five minutes. From this time to the 9th, morphia, venesection, cupping, tobacco enemata, and mercurials, were tried assiduously without any good result; on the contrary, the fits had become more violent and frequent, the pulse had risen to 112, the agony and

difficulty of breathing had become almost intolerable, and the head literally dripped with moisture. Chloroform was now tried, and with instant relief—the spasm relaxing, the breathing becoming freed, the pulse falling to 60—64, and the dripping perspiration ceasing as if by magic. From this time to the 20th the influence of the chloroform was kept up as the symptoms required, (not less than 64½ oz. being consumed in the process,) when symptoms of determination of blood to the head made their appearance, and required for a time a different treatment. The tetanic symptoms, however, were virtually at an end, and the patient was discharged cured a fortnight afterwards.

### (B.) CONCERNING THE RESPIRATORY SYSTEM.

ART. 35.—*The prevention of the Epizootic Pneumonia of Horned Cattle by Inoculation.* By M. WILLEMS, of Hasselt.

(*Gaz. Méd. de Paris*, Nov. 13 and 20, 1852.)

This idea, which is the revival of an old idea, is at present occupying a good deal of attention in Belgium and France, and from the facts which have already transpired, it seems to have no small claim to this attention. The disease in question has been shown to be truly contagious in its nature, and like other contagious diseases, only once communicable to the same animal. The matter used in the inoculation is taken from a mild case of the disorder, and inserted into the tail. The results are very variable. There is always considerable inflammatory disturbance, and sometimes this has proceeded to gangrene and loss of the tail, with serious or fatal sloughing of the genitals and pelvic contents; but most generally the mischief is limited and transient, or easily kept in check by scarifications, or by docking off the end of the tail, and cauterising the stump. Indeed, that the results are not very serious, appears in the fact stated by M. Lombard, one of the chief advocates of the procedure, that out of 4878 cattle which had been inoculated, only 15 perished.

The facts showing the preservative power of the inoculation are as yet not very ample, but the following may be depended upon. Nine hundred cattle were inoculated at Hasselt, between April 1852 and July 1853, when the epizootic disease was raging with great violence, the operation being performed either by M. Willems himself, or under his immediate superintendence; and of these, not one contracted the disorder. Three hundred others were operated upon in another place, and of these, only one failed. At the request of MM. Magendie, Gluge, and Thiernesse, who had been commissioned to inquire into the matter, M. Willems placed a cow and a heifer, suffering under the actual disease, in a cow-house, where there were six cattle that had been inoculated. The cow died two nights afterwards, and was allowed to remain for ten hours longer, when her carcass was examined; the heifer also died at a later period; but the inoculated cattle experienced no harm whatever. He also placed two protected cows in a building were there were several diseased cows, and suffered them to remain for some days, and they escaped in like manner. Here at present the question rests.

### Art. 36.—*Sarcinæ in the Lungs.* By Dr. Zenker.

(*Henle's Zeitsch.*, Bd. iii, Ht. 1, and *Medico-Chir. Rev.*, April 1853.)

The sarcinæ of Goodsir are most frequently found in the matters vomited, or discharged by stool, or found in the stomach and intestines after death. Heller has noticed them in the urine in three cases; and although some doubt was expressed as to these observations, Hughes Bennett has lately also detected them in the urine. Virchow has found them in a gangrenous portion of lung. Dr. Zenker has found them also in the lung, although the case differs materially from that related by Virchow.

In a patient dying with encephaloid disease of the lungs and abdomen, in the lower lobes of both lungs, both in parts collapsed and in air-holding parts, were numerous small yellow patches, made up chiefly of sarcinæ, which were contained also in the serum pressed out of the lung. The yellow patches showed also fatty drops and cells, portions of plants, and yellow masses, which gave the colour to the part. The sarcinæ and similar vegetable débris were found also in the stomach. The author therefore believes that the sarcinæ were, in reality, derived from the stomach, although he does not conceive that they entered the lung after death. On the contrary, he believes that a portion of vomited fluid was drawn into the lung during the last days of life. No vomiting, however, was at this time noticed.

In Virchow's case, where sarcinæ were found in a single point, such an interpretation is hardly justifiable. Indeed, from the immense quantity of sarcinæ found at one point only in the lung, an actual growth of them in that situation can hardly be denied.

In Dr. Zenker's cases, the presence of sarcinæ gave rise to no dyspeptic symptoms, and the author coincides with Virchow and Frerichs as to the perfect innocuousness of the sarcinæ ventriculi.

### Art. 37.—*On the Influence of Hydrocyanic Acid on the Larynx.* By Dr. Cogswell.

(*Dublin Medical Press*, Nov. 3, 1852.)

In experiments on frogs with hydrocyanic acid and other poisons Dr. Cogswell found, that in four or five minutes after the acid had been administered, and this whether it was given by the mouth or injected beneath the skin, the animals would keep the mouth open, when the inside was observed to be preternaturally florid. After death, which took place at an average in about two hours, the blood throughout the system was of a bright scarlet colour. But what most drew his attention was the state of the lungs, which were enormously distended, not collapsing when exposed. This led to an examination of the entrance of the larynx (aditus laryngis) which proved to be spasmodically closed. On its being pushed open with a probe, the lungs collapsed. On the other hand, in mammalia poisoned with prussic acid, the lungs are found to collapse, and the blood is dark. Could this difference be accounted for by the difference in the respiratory mechanism of the two classes of animals? The frog has

neither ribs nor diaphragm, but forces the air into the lungs by the muscles of the throat, and expels it by the abdominal muscles. The lungs are little more than a pair of simple sacs. It has no epiglottis. The aditus laryngis is seen at the back of the mouth as a slit in a convexity formed by the two arytænoid cartilages. The muscles of the larynx in the batrachia, according to Mr. Bishop, are the dilator aditus laryngis and the constrictor aditus laryngis; besides which the tailless batrachia (the frog, &c.) have another called the compressor glottidis, which, as the author understood its functions, would cause the closure of the aditus. He suggested whether the arterial hue of the blood might not be occasioned by the unusual quantity of air in the lungs. In mammalia he had thought it possible that other appearances might be found after death, which would indicate whether the poison has a marked influence on the larynx and trachea. A dose having been given to a rabbit, in ten seconds it fell on the side struggling, in thirty seconds it uttered a cry, followed by a few gasping respirations, and after that it ceased to move. The lungs collapsed on being exposed, and presented nothing very remarkable, but the blood-vessels of the larynx and trachea were intensely congested. The author then proceeded to review the published accounts of the effects of prussic acid under the several heads of physiological, necroscopical, and therapeutical. First, it acted most rapidly when inhaled or injected into the windpipe. Disturbance of the respiration was included among the characteristic symptoms. Mr. Blake, in trying to fix the earliest period at which it begins to act, had found the effects retarded by introducing a tube into the trachea. M. Jorg and others, at Leipsic, when taking it for experiment, had suffered from bronchitis. Secondly, the post-mortem examination of the larynx and trachea had not been much attended to, but such evidence as existed was confirmatory of the present view. Mr. Taylor stated that these organs had been found reddened, but thought this might be due to accidental causes. In the seven epileptic patients mentioned by Orfila, who lost their lives, at Paris, in 1830, from an over-dose of the acid, a deep red colour of the larynx, trachea, and bronchi was among the post-mortem appearances. Thirdly, the diseases to which writers on prussic acid have paid most attention, are catarrhal and spasmodic affections of the larynx and trachea; and the eulogistic terms in which they speak of it are hardly paralleled in the history of medicine. After quoting the opinions of various eminent practitioners to this effect, the author concluded with observing that he thought there were sufficient data to sustain a probability that the larynx and trachea are the seat of a special action under the use of prussic acid. He did not mean an exclusive action, nor would he enter into the question as to which element in the structure was chiefly concerned in causing the phenomena. As prussic acid seemed to be much employed to destroy useless animals, &c., the point under immediate consideration could soon be tested on a wide scale by other observers. If decided in the affirmative, this would be an important step, as giving precision to our inquiries concerning the kind of diseases in which it should be given, as a guide to the treatment of poisoning with the acid, and as an aid in medico-legal investigations.

## Art. 38.—*On Anæsthetic Inhalations in certain painful Affections of the Chest.* By Dr. Carrière, of Strasbourg.

(*Bulletin Gén. de Thérap.*, Aug. 1852, and *Nouvelle Encyclogr. des Sci. Med.*, Nov. 1852.)

Dr. Carrière relates a case of convulsive cough and one of angina pectoris as examples of the benefits which are likely to result from the employment of anæsthetic inhalations in certain painful affections of the chest.

Case 1.—The subject of this case was a nervous girl, 19 years of age, without fever, organic pulmonary disorder, or any perceptible derangement of her health, except a violent spasmodic cough, chiefly at night. Simple means were applied, then morphia, belladonna, oil of bitter almonds, and other remedies were tried without success for fifteen days. She was next put partially under the influence of chloroform, twice in the course of one evening, when the cough ceased, not again to return.

Case 2.—M. P—, æt. 64, previously in the enjoyment of good health, has suffered for some months from the symptoms of fully-developed angina pectoris, his paroxysms being brought on by the slightest mental or physical exertion. The circulation is extremely feeble, and there is some œdema in the limbs, but the respiration is pretty free, and there is no particular mischief in the heart. During each paroxysm the lungs became considerably engorged, and after it, some viscid bloody mucus is expectorated. Blisters, sinapisms, narcotic fumigations, belladonna, hemlock, digitalis, æther, quinine, and other stock remedies were tried for some time, without avail. Chloroform inhalations were then recommended, but the patient having an objection to them æther was substituted, and with the same marked and immediate relief as in the former case. The instructions were for the patient himself to conduct the inhalation and to begin as soon as he felt the threatenings of the paroxysm. The result was, that the threatenings became less and less frequent, and in two months disappeared altogether; and the patient was restored to a state of comparatively good health. It must be stated that the objections to chloroform were overcome in the course of the treatment, and this remedy having been substituted for the æther was preferred to it.

## Art. 39.—*On the use of Tracheotomy in Croup.* By H. Smith, Esq., Surgeon to the Westminster General Dispensary.

(*Medical Times and Gazette*, March 5, 1853.)

In this paper Mr. Smith gives the particulars of three cases of croup in which he operated, and afterwards proceeds to the following comment :—

In the case first detailed (he says) there is presented to us an instance of croup which had run its course with extreme rapidity, and which was accompanied by symptoms of great severity. It was a case in which the operation appeared to be the only resource left. So exhausted, indeed, was the little patient, that the shock of cutting through the tissues, with scarcely any loss of blood, apparently destroyed life. But after the trachea was opened, the child was revived from a seemingly hopeless condition, and an extraordinary improvement was the result. It seemed as though this improvement would go on, when, from some cause or other which could not be ascertained, the patient was suddenly asphyxiated. Possibly the tube may have become

blocked up, and the nurse may not have cleared it in sufficient time. It was evident that death was from sudden asphyxia.

On the *post-mortem* examination, it was found that there was no reason to regret that the operation had been done, for the appearances indicated that it was a case where tracheotomy might give a fair chance of life. The false membrane was neither thick nor closely adherent, nor did it extend into the bronchi, and the lungs were comparatively free from disease.

In the case next detailed, there are striking differences in many points. The disease had existed for a much greater length of time, and the symptoms were by no means so distressing as in the first instance. The operation gave not only the same temporary relief, but the relief which was given was prolonged to a much greater period of time, the patient having lived thirty-six hours after it. Yet, on *post-mortem* examination, it was found that the disease had existed in its most intense form, the false membrane being very thick, and being extended into the ramifications of the bronchial tubes. It is in this condition of the disease that there can be so little hope of tracheotomy doing any good; and it is surprising that so much relief was given, and life saved so long. Moreover, in this instance, the operation itself was long and tedious, and there was a considerable loss of blood; while, in the case before detailed, the operative process itself was very much more quickly accomplished, and there was scarcely any loss of blood.

In the third case, the difference which obtained is in reference to the nature of the disease. In the two former, the affection was the ordinary inflammatory croup, the seat of it being the lower portion of the principal air tube. In this instance, however, there is presented to us that species of croup termed by the French authors "diphtherite," which consists essentially of a deposit of inflammatory exudation in patches upon the upper part of the windpipe, upon the epiglottis, superior portion of larynx and pharynx, the trachea being free. This is the form of disease in which it is stated that the operation of tracheotomy has been most successful; and there is reason to believe that it would be so in consequence of the trachea and larger bronchi being free from the deposit. This disease, however, is for the most part the result of an attack of measles; and it is extremely likely that the lungs are, or have been, in a state of inflammation. In all probability, it was the existence of inflammation of the lungs that rendered the operation of no ultimate avail in this case.

This subject of tracheotomy appears to myself to be surrounded with many difficulties. Should the operation ever be performed or not in croup, is a question which, perhaps, may be legitimately asked. If men of great experience are appealed to, it is difficult to get any satisfactory answer. The question could only be met by a reference to the data of the operation, which, however, have not been put together. My own feeling on the matter is, that the surgeon is placed in a most trying situation when called upon to perform this operation. He is urged on by the parents of the child to resort to any measure which may give a chance of relief to the great distress from which they see it is suffering. He feels that there is no hope for it if the operation is not done, and yet he cannot avoid the conviction, that he is resorting to a desperate measure. At the same time, he does not like to throw away this last chance, which *may* save the life which is already in such extreme danger.

This state of mind must make one undecided and timid, and possibly a case occurs where the result has made the surgeon repent that he had not given his patient this last chance. In other instances besides those above related, the question as to the propriety of this operation has been pressed upon me. The most instructive was the following:—

I was suddenly summoned, at 10 a. m., on the 9th of February, to a child, æt. 3, the father of the patient stating that it had been attacked with a fit of difficulty of breathing, and that he expected it would be dead before he could get to his house. I at once proceeded with him, taking my instruments. On arrival I found that the child had recovered from the paroxysm, but was told that he had been fighting for breath and had grown black in the face. He was now breathing with difficulty and had all the symptoms of disease in the upper part of the windpipe. On looking into the mouth, the fauces and tonsils were seen studded with a deposit. The child had had measles about two weeks previous, and afterwards inflammation of the lungs, which had been actively treated and had been subdued. It was evident that the deposit had involved the upper part of the larynx; still the symptoms did not appear to me to justify an operation, for which the parents were rather anxious. I ordered a blister to the throat, and recommended some wine and water, and at the same time desired the parents to watch the child narrowly. I saw the child in four hours afterwards, and found it much in the same condition, but rather lower. However, he was enabled to sit up in his mother's lap. At 9 p. m. the child had a sudden fit of dyspnœa, and died before there was a possibility of getting to it.

I examined the body next day. The back part of the tongue, the fauces, and pharynx were studded with the inflammatory deposit. The opening of the glottis was obstructed by tenacious mucus, and on clearing this away I found the same kind of deposit as existed on the fauces studding the inner surface of the upper portion of the larynx, but leaving the trachea free.

Now on seeing this case at first, I felt that in all probability tracheotomy would be required, yet the condition of the child did not appear to me to be sufficiently bad, notwithstanding the parent's description of the attack of dyspnœa; and, although strongly tempted to perform the operation, I allowed myself to defer it until the symptoms should become worse. The result of this indecision was shown. The examination after death too surely proved that the little child had become suddenly asphyxiated, and that tracheotomy might have saved life. This, at least, was the remedy indicated. Moreover, the disease was of that form in which the operation has been shown by the French practitioners to be so much more likely to be attended by success than in ordinary instances of inflammatory croup, and it must be confessed that I could not divest myself of the idea that a little more decision on my part might have prevented the fatal event.

## Art. 40.—*On the Question of Relation between Phthisis and Hysteria.* By Dr. Theophilus Thompson.

(*Lancet*, Nov. 13, 1852.)

The object of this paper was to show, first, that hysteria often simulates phthisis. Secondly, that it tends to aggravate certain symptoms of incipient consumption. Thirdly, that as phthisis becomes established, hysterical symptoms usually become less characteristic and various, and finally disappear. Fourthly, that when the two diatheses coexist, the prognosis and the treatment must be modified. The author suggested some points of distinction between the true and the simulated phthisis, especially in the latter the peculiar character of the cough, the relative disproportionateness of the local and the general symptoms,—the inconsistency of loquacious complaints with

the sprightly or indifferent countenance, the pain under the left mamma — sensitiveness of skin, especially over the sternum and between the shoulders, and sometimes a sense of suffocation when these two points are simultaneously compressed. Hæmoptysis was mentioned as often aggravated in the early periods of phthisis, and even induced by hysteria in non-phthisical subjects, and under such circumstances sometimes recurring at fixed periods of the day or the night. The occasional profuseness of such hæmoptysis might be due partly to sudden congestion, partly to deficient crassamentum in the blood. Dr. Thompson expressed an opinion that hysterical congestion sometimes occurred to such an extent in the lungs as to occasion marked dulness on percussion, but when so induced the seat of dulness was apt to vary from one side to the other. He suggested that hypertrophy of the breasts and the proneness to the more transient swellings, by the German authors designated anathymiasis, might depend on analogous conditions, and argued that fixing the attention of such patients on the lungs might tend to disturb their functions, since directions of the consciousness may thus influence an organ unfavorably, and an expectancy of a morbid action (as in the instance of cramp) tend to its renewal. Dr. Thompson related several cases in defence of his positions. One in which pseudo-phthisis was induced by mental disquietude and rapidly benefited by change of scene. A second, in which cough for some days and nights almost incessant, and profuse hæmoptysis occurring at stated periods of the night, long resisting treatment, occurred with very slight grounds for suspecting consumption. A third, in which respirations accelerated to seventy a minute, with difficult and painful inspiration, soon yielded to remedies adapted to invigorate the nervous system, and relieve spinal irritation, although certain local signs, the appearance of the gums, and the family history, naturally excited some apprehension as to the ultimate result. And a fourth instance, in which a young woman for nearly five years subject to varied hysterical symptoms, especially gastrodynia, palpitation, and cough, became the subject of dull percussion, alternating from one side to the other; gradually, however, the hysterical symptoms had disappeared, and the indications of pulmonary affection were fixed to one side, although considerable advantage was derived from the administration of cod-liver oil and other treatment. Dr. Thompson concluded his communication by remarking, first, that when phthisis commences in hysterical subjects, the symptoms are often aggravated to an extent disproportioned to the amount of organic change. Secondly, that hysteria and phthisis, although not incompatible, are uncongenial, so that as the latter disease advances the former usually retreats; and that the coexistence of hysterical symptoms, especially if severe, may encourage a somewhat hopeful prognosis, even when phthisis is established. Thirdly, that when these two disorders are concurrent, a more "hardening system" may commonly be employed than is expedient in cases of unmodified consumption.

## Art. 41.—*On the Characters of the Prevalent Pleuro-pneumonia.* By Dr. Risdon Bennett.

*Medical Times and Gazette*, Oct. 23, 1853.)

Apart from differences in what is called the epidemic constitution, there are important differences in the same disease, dependent perhaps on climate, national constitution, habits, modes of life, &c., as well as differences dependent on varieties of individual constitution, and that this, although known, is not always remembered in practice. This difference was shown by the treatment of erysipelas, of which Dr. Bennett saw some cases last summer at the Hôtel Dieu, and, on inquiring into the treatment, was told that rest, and some simple dietetic rules, were all that were required, it being a very slight disease, and never fatal, unless associated with some visceral disease or cachectic habit, the reverse being the case in the London hospitals, and even in private practice in these kingdoms. Dr. Bennett, however, did not consider it right to discard altogether the results of former experience, because bleeding, and antimony, &c., are not now found so serviceable in the treatment of pneumonia as we were led to believe, or as they formerly were. They are not to be rejected altogether as fallacious, for they will warrant our confidence, if judiciously employed, in the treatment of the same type of disease as that for which they were recommended. The author then went on to assert, that true sthenic pneumonia of the croupous variety, that is, inflammation attacking the air-cells, characterised by the effusion of plastic matter by which they are obliterated, leading to solidification of the lung, has become a comparatively rare disease of late. The ordinary descriptions of this disease are true to nature, and the attendant pleuritis, itself a subsidiary or secondary disease, merely induces an effusion of plastic lymph upon the serous membrane, unaccompanied by much liquid; but the inflammatory disease which has prevailed latterly differs from it in its pathology and treatment. Neither is it exactly the typhoid pneumonia; and certainly not associated with typhus or typhoid fever. The pleuritis has frequently preceded the pneumonia, and has often been the more severe and prominent complaint. The disease has occasionally commenced with catarrh, passing subsequently into the pleuro-pneumonia. The pain is usually very severe, and effusion takes place with great rapidity and to a considerable extent, soon becoming purulent; cough not troublesome; the sputa copious, and more or less tenacious and glairy; sometimes streaked with blood, at others resembling prune juice, or of a dirty green-yellow colour. It does not always present the same characters in the same cases, but may vary daily; dyspnœa not urgent generally, nor the respirations much increased in frequency. The skin and tongue usually moist; the former clammy and the latter covered with a dirty creamy fur. Pulse rapid but soft, and often feeble; urine sometimes high-coloured and scanty, at others copious and of a pale straw colour. The physical signs indicate the rapid spread of inflammation over a great extent of surface, usually confined to one side. The subsequent solidification of lung is not very great, however, nor

very complete, being checked by the pleuritic effusion, which compresses the organs, and prevent its solidification. When the effusion has not been great, instead of extensive solidification, there is usually suppurative infiltration of the lung, showing a tendency to gangrenous destruction, the chief points of interest in the autopsies being the small amount of solidification notwithstanding the extent of lung involved, it being greatest in the immediate vicinity of the gangrenous cavities. The tendency to suppuration was more marked in the pleural cavity. In one case detailed, Dr. Bennett thought the principal accumulation of pus was interlobular, and that, as the acute stage passed away, the effusion into the cavity of the pleura was absorbed, while a considerable quantity remained between the lobules of the lung and its base, so that when it had its exit the outlet was very direct, opening immediately, or nearly so, into the larger bronchial trunks, thus effecting the more speedy and complete evacuation of the cavity, and its consequent obliteration. These signs and symptoms the author thought sufficient to show that this form of inflammation differs materially from the ordinary pleuro-pneumonia. This difference, he said, was not owing to mere peculiarities of individual constitution, for he has met with it in persons of various constitutions, and moving in different social spheres. Neither has it any necessary connection with continued fever; but he is inclined to refer it to a form of erysipelas, although it is not generally associated with its external manifestations. The pneumonia of fever, erysipelas, and cachexia is usually asthenic; but this variety Dr. Bennett regards as itself a form of erysipelatous inflammation, chiefly because it has prevailed contemporaneously with external erysipelas, and because an erysipelatous form of cynanche has been very common, and in many cases has been an attendant on the thoracic inflammation, sore throat having been frequently complained of in the beginning, and, as this has subsided, bronchial symptoms have occurred, to which the pleuro-pneumonia has succeded. With respect to treatment, general bleeding is inadmissible; the local loss of blood in the beginning is useful, if to a limited extent. Counter-irritation may be employed safely, more early than in the sthenic form of inflammation; blisters have yielded markedly beneficial results. Calomel and antimony, if given at all, must be used most sparingly, and with the utmost caution. Five grains of Dover's powder, with one grain of calomel, three or four times a-day, have appeared to be very useful, the calomel not being given so as to affect the mouth. Ammonia is the best expectorant, and is given by Dr. Bennett, combined with its acetate, and camphor mixture, or sometimes with serpentaria or senega. Beef-tea always, and wine frequently, are necessary. Under any form of treatment, the affection is attended with great danger, and, in its worst forms, is very fatal. In some cases, so rapid is the prostration, that Dr. Bennett has thought stimulants necessary from the first. An ample and efficient blister, with wine, beef-tea, and ammonia, are, he believes, the remedies on which most reliance should be placed, in the most aggravated and most characteristic examples of the disease.

## (C.) CONCERNING THE CIRCULATORY SYSTEM.

### ART. 42.—*The Fibrinous Constituent of the Blood in relation to Disease.* By B. W. RICHARDSON.

(*Medical Times and Gazette*, Feb. 12, 1853.)

The commencement of this paper is occupied by the restatement of the views which the author had previously announced as to the formation of fibrinous concretions in the heart and blood-vessels during life, and much stress is laid upon the opinion, that in many of these diseases which are known to be attended with an abnormal amount of fibrine in the blood, and which terminate in what is called "the sinking state," the mere formation of a fibrinous clot in the circulating system is often the chief and only cause of the sinking symptoms. By reference to numerous cases, the author endeavours to prove that fibrinous concretions were capable of being formed whilst the processes of life were going on, and then passed on to consider the question: What is the source of a fibrinous concretion; is it an exudation from the inner membrane of the vascular machinery, or is it a direct deposit from the blood? The discussion of this question involved many points of argument, the final answer being, that fibrinous concretions of large size are never the absolute result of an exudation from the lining membrane, and that they are, therefore, direct and true deposits from the blood. Under the next head the author spoke of fibrine as it exists in the blood, and on the chemical nature of a fibrinous concretion. There could be no doubt, he said, that fibrine existed in the blood as *bonâ fide* fibrine; and he introduced a variety of arguments in opposition to the opinion of Mulder and Horn on this subject. Fibrinous masses removed from the body after death varied in chemical properties; sometimes they were simple fibrine, at other times the fibrine was combined with the binoxides and tritoxides of protein. The cause of fibrinous deposits during life was then noticed. It was necessary, in entering on this inquiry, to consider what were the agencies which prevented the coagulation of fibrine during life. Several theories had been proposed in reply to this question. The nervous influence had been assigned as the cause of the fluidity of fibrine in the circulating blood by some writers, the vital principle by others, and the solvent power of the blood by others. The first two hypotheses were untenable altogether, inasmuch as they were removed from the influence of the reasoning faculties; the last (a theory) was incorrect in fact. The author had tried the influence of saline solutions on fibrine in the most careful manner, and had found that all saline substances, when perfect in the matter of chemical combination, had no solvent power over fibrine. He believed that the discrepancies which were to be found amongst writers on this matter had arisen from the circumstance, that different experimentalists had employed salts varying slightly in their chemical nature. The one, employing a salt containing a little excess of acid or of alkali, had found fibrine partially soluble in a solution of that salt; whilst another, employing a perfectly neutral salt, had found fibrine insoluble in a solution of it. The author himself was of opinion, that, in normal conditions of the blood, the fibrine

was in a mere state of suspension; and the agents requisite to secure this suspension were a proper amount of motion, a proper degree of temperature, and the continual and rapid development of the three processes,—reproduction, dissolution, and elimination. A combination of simple, and yet striking evidences, added peculiar force to this supposition. Thus, the idea of its suspension in the blood was quite in accordance with the ultimate application of fibrine; being suspended merely, it entered the more readily into the composition of muscle, undergoing, in fact, a mere process of deposition. Suspension, moreover, implied removal from chemical influences and stability in the matter of quantity,—a property which fibrine really possessed. But the most striking proof was the fact, that fibrine in the circulating blood obeyed the same laws as did other dense fluids when mechanically suspended in liquids lighter than themselves. Thus if the motion of the blood was arrested in any part of the vascular system, as by passing through a dilated artery, over a roughened surface, or past an obstructing barrier, the result was retardation of the current, and a deposit of fibrine consequent on the retardation. In normal states, then, fibrine was merely suspended in the blood, and existed there in a certain proportion. But, in other states, it underwent various changes; it might be diminished in quantity, or be almost wanting altogether; or secondly it might be increased in quantity; so increased that its mechanical suspension was rendered impossible, and then there was nothing for it, but that the superfluous portion obey the laws which lead to deposition, and become formed at some favouring point into a fibrinous concretion. But why should increase of fibrine take place? some one might inquire. This question was most important, and in answering it the author would direct the attention of the Society to one or two facts with reference to the formation of fibrine. There could now be no doubt that the presence of oxygen in a certain proportion in the body, and the presence of a moderate degree of temperature, were both necessary to secure the due formation of fibrine. Dr. Gairdner had shown that if an animal were made to breathe pure oxygen for a little time, the fibrine of its blood was increased in amount. He (Mr. Richardson) had carried Dr. Gairdner's experiment further, and had found that if an animal were made to breathe for a great length of time an atmosphere containing an excess of oxygen it sank and died at last, its heart loaded almost to bursting, with fibrinous concretions. Thus, then, the mere inhalation of a superoxidised atmosphere was sufficient to produce an overplus of fibrine. The author was not yet certain whether a condition of atmosphere capable of giving rise to such results ever existed; the subject required further investigation. There were other circumstances capable of causing the increase in question: 1st. Fibrine might be relatively increased from the deficiency of some of the other blood constituents. 2d. It was evident that if respiration could be rendered too quick, a larger amount of blood than was normal would be exposed to the atmospheric influence, and then would the fibrine be increased. This was, however, rarely a primary condition, and there remained, the author opined, a much more common cause for excessive oxidation of the blood in general, and of fibrine in particular. The mention of this

idea led him (the author) to introduce incidentally a new theory as to the cause of inflammatory fever and inflammation. It was a law in the animal economy, that all the elements which entered into its composition should pass off from the body by the various eliminatory processes, just in proportion to their introduction into, and distribution through the body: thus oxygen, carbon, hydrogen, nitrogen, were, in health, ever being eliminated by the skin, by the lungs, by the kidneys, and so on. Now, if from any external physical cause one or other of these eliminatory functions were arrested, as the function of the skin, the results were these:—Either some other eliminating organ performed additional duty until the balance was restored, and the system saved, or else the suppressed elements, viz., the grand supporter of combustion, oxygen, and the combustible bodies, hydrogen and carbon, were carried a second time round the system, were re-burned, and made to go through a second series of metamorphic changes, thus giving rise, in the first instance, to that heated, excited state of system called inflammatory fever, producing an abnormal increase in the fibrine, the salts, and some other of the blood constituents, and eventually leading, if a counter-agent were not forthcoming, to the concentration of this super-activity in some favorable structure or organ, and to the process called inflammation—a process which is, in fact, nothing more than the too rapid development in some special organ of the three successive acts—reproduction, dissolution, and elimination. From these readings of the subject, it would easily be seen, the author thought, how it was that super-fibrination of the blood attended inflammatory diseases; why fibrine exuded from serous membranes in some such diseases; and why it was deposited in masses in the circulating system. He was particularly anxious to dwell on the opinion that suppression of one or other of the eliminatory processes gave rise to the results he had described; and he illustrated the question by the analogical observation, that the system, under the circumstances named, was made for the time "to consume its own smoke," an act quite incompatible with health. Mr. Richardson, at this point, proceeded to show the practical nature of the subject he had chosen; he confined his attention to the effects of fibrinous deposits—these deposits might take place in any part of the circulating machinery, and the symptoms they produced varied consequently; forming in the heart, they produce their special effects in at least five different ways. 1st. They may be developed in the course of almost any acute inflammatory complaint. 2d. They may be developed suddenly, and produce the most alarming symptoms, the patient having shown but few previous indications of acute disease. 3d. They may give rise to symptoms peculiar to themselves, throughout long periods of time, no other disease being present. 4th. They may give rise to sudden death, without having previously produced any special symptoms. 5th. They may follow in the course of some exhausting diseases, and in a secondary manner hasten a fatal termination. After the statement of these general rules, a minute description of the various symptoms which fibrinous concretions produce was given, and at the conclusion of the paper a few illustrative pathological specimens were shown, from one of which it was demonstrated that these concretions, when occurring in arteries, are cylindrical like the vessel itself.

ART. 43.—*A Comparative View of some of the More Important Points of the Pathology of Rheumatic and Non-Rheumatic Pericarditis, deduced from an Analysis of Cases.* By Dr. ORMEROD.

(*Lancet*, Nov. 20, 1852.)

The author commenced by a reference to the researches of the late Dr. Taylor, who had satisfactorily shown that acute rheumatism was not exclusively the cause of pericarditis, and who had also called attention to the importance of granular disease of the kidney in reference to this morbid condition. The author desired to limit the use of the word pericarditis to present inflammation of the pericardium; and this analysis referred exclusively to cases of this nature. The means of investigation comprehended complete records of 1410 cases observed under nearly similar circumstances; that is, in the wards of different hospitals. Of these, 1249=88·59 per cent. were not cases of rheumatism; 161=11·41 per cent. were admitted on account of rheumatism, or suffered from it while under observation. Of the whole number, 85=6 per cent., had recent pericarditis, observed during life, or discovered after death, and were thus distributed:—

| | | |
|---|---|---|
| 24=1·92 per cent. occurred among | | 1249 non-rheumatic cases. |
| 61=37·88 per cent. | „ | 161 rheumatic cases. |
| 85 = 6 per cent. | | 1410 |

The mean age of 61 subjects of rheumatic pericarditis was about 21; the mean age of 24 subjects of non-rheumatic pericarditis was 42; the extremes being 7 and 63 years. As to the different causes of the pericarditis—

| | | |
|---|---|---|
| Rheumatic | 61 | cases coincided with acute rheumatism. |
| Non-rheumatic of local origin | 7 | ensued on inflammation of lungs or pleura. |
| | 2 | „ malignant disease of the pericardium. |
| | 1 | ensued on old cardiac disease. |
| Non-rheumatic of constitutional origin | 6 | coincided with granular disease of the kidney. |
| | 4 | „ hæmorrhage or exhaustion. |
| | 2 | „ scarlatina or erysipelas respectively. |
| | 2 | were inexplicable. |
| | 85 | |

The date of the accession of pericarditis was determined in 33 of the rheumatic cases. The mean of these observations gave the 10·5th day of the rheumatic attack as that on which the pericardial complication most commonly supervened. The question, whether a first or second attack of rheumatism was more likely to be accompanied by pericarditis, was beyond the reach of hospital statistics. This source of information was silent also on the question, whether pericarditis be more likely to occur in severe or in the slighter cases of rheumatic fever. It might, however, be safely inferred, that the severity of the articular and pericardial affections bore no very close relationship to each other. It was certain that the most severe, even fatal pericarditis, might occur

where there was but faint evidence of articular affection, and this latter condition might exist in the most aggravated and intense form without involving the addition of pericarditis to the other sources of distress. The author then entered upon the consideration of the subject of non-rheumatic pericarditis of local origin; and a question of importance here presented itself,—What was the influence of pre-existent cardiac or pulmonary affections in inducing inflammation of the pericardium? The question was of equal importance in relation to acute rheumatism. The relation of pulmonary inflammation to pericarditis was thus illustrated:—In the 1410 cases, the basis of this inquiry, some form of pulmonary inflammation—that is, pneumonia, pleuritis, or pleuro-pneumonia—was ascertained to exist, either by auscultation or dissection, in 265 cases. Of these,—

| | | | |
|---|---|---|---|
| 117 had pneumonia, | of which | 19 had recent | pericarditis. |
| 86 had pleurisy, | ,, | 6 | ,, |
| 62 had pleuro-pneumonia, | ,, | 8 | ,, |
| 265 | | 33 = | 12·4 per cent. |

In the rheumatic class, pericardial inflammation commonly preceded, yet sometimes, though rarely, followed, pulmonary inflammation. The non-rheumatic class told quite a different story; here pulmonary inflammation had apparently a distinct influence in inducing pericarditis, and this influence was most evident in cases of pleurisy; and clinical observation bore out the conclusion, that the pericarditis was subsequent to, and probably contingent on, the pulmonary inflammation. The author then referred to the comparative fatality of non-rheumatic compared with rheumatic pericarditis, and also to the desirableness of instituting an exact comparison between Bright's disease of the kidney and acute rheumatism, in respect to their tendencies to induce inflammation of the pericardium. In conclusion, the author desired to ascertain how far the results obtained by his present analysis agreed with those of the published cases of Dr. Taylor, who had made the subject of non-rheumatic pericarditis so peculiarly his own. The deductions seemed identical, and one rose from the perusal of those elaborate clinical reports with a conviction that non-rheumatic pericarditis was more within the province of the anatomist than of the physician. It was a disease with few or no symptoms, its physical signs recognised more often by a chance discovery than on the suggestions of the disease, and its morbid changes small in amount and apparently inactive; and, where opportunity had occurred of watching the disease some time previous to death, it had been apparently without effect on the general symptoms, its presence or absence being determined by the ear alone; and still, in these, its connexion with the fatal termination had appeared to be that of a coincidence rather than of a cause.

ART. 44.—*Observations on the Use of Potash in the Treatment of Scurvy.* By Dr. HAMMOND, Assistant-Surgeon, U. S. Army.

(*American Journal of Medical Sciences*, Jan. 1853.)

The object of this paper is to confirm Dr. Garrod's views as to the

efficacy of potash in scurvy. Twelve cases occurring in soldiers during the Mexican campaign, were treated by the alkali, and all recovered without any lameness or deformity. The minimum period of treatment was three days, the maximum twenty-one days, the medium about nine days and a half.

Case 1.—William Henry, a private in company "K," 2d U. S. dragoons, admitted in hospital at Cebolleta, New Mexico, January 2, 1850, with scorbutus. Has been on detached service to Santa Fé, and while there became affected. Countenance sallow and bloated, breath extremely fetid, and gums exceedingly tender, bleeding profusely upon the slightest touch. Legs and thighs covered with the characteristic livid spots; stiffness of the knee and ankle-joints, and slight œdema of the feet. Ordered, potass. carb., grs. v, ter in die, and sol. aluminis, for mouth.

*January* 3. Much improved; continued medicines, 4th, 5th, 6th, and 7th; continued to improve; ordered medicines as before.

8*th*. Gums hard and firm; maculæ on legs and thighs entirely gone; complexion clear, and general health restored. Omit medicine.

9*th*. Discharged hospital, cured.

Case 2.—Augustus Miller, private 2d dragoons. Admitted into hospital May 26, 1850. Has been affected with scurvy for three weeks, at Albuquerque, New Mexico, and has been under treatment for it. Does not know what was given him. Transferred with his company to this post, May 25, 1850. Says he feels a little better since his arrival here. Has some pain in right leg, at seat of a fracture which occurred some years since. Maculæ on legs and thighs very abundant, and two or three large extravasations of blood about the ankle-joints of each leg. Bowels regular. Ordered potass. carb., grs. v, ter in die.

28*th*. Spots on lower extremities disappearing; skin over fracture livid in appearance, and slight motion can be perceived at the fractured part. Continued medicine as above.

29*th*. Improving. Pain in leg much less. Motion of fractured parts slightly perceptible. Extravasation fading. Gums firm, and healthy in appearance. Committed some indiscretion in his diet to-day, in consequence of which he became affected with dysentery, which required very active treatment. Potass. carb. was omitted on the 31st, and on June 1st all signs of scurvy had disappeared. He is much debilitated from the effect of the dysentery, which still continues.

*June* 7. Convalescent. Continued to gain strength, and on the 12th was discharged hospital, and returned to duty.

Case 3.—Rafael Garcia, a Mexican, has been affected with scurvy for a month or more at Belin, New Mexico, where he has been on a visit to his friends. First noticed the disease at that place. Returned to this village June 5, 1850. I first saw him on the 7th. Gums exceedingly tender and spongy; teeth very loose, and sore to the touch. Has several large extravasations of blood on his legs, and myriads of the characteristic spots. On the anterior surface of the left leg is an ulcer three inches in diameter, of a pale, indolent appearance; knees stiff, flexed on the thigh, and very painful on any attempt to extend them. Ordered potass. bi-tart., ʒj, ter in die. This medicine was continued for two weeks, at the end of which time all signs of scurvy had disappeared, with the exception of the stiffness of the knees. By friction and careful passive motion for a week, the free use of these joints was completely restored. The ulcer of the leg healed perfectly without the use of any local application but ung. simplex.

## Art. 45.—*Some Observations upon Arcus Senilis as a Diagnostic symptom of Fatty Degeneration of the Heart.*

By E. B. Hoskins, M.D., (U.S.)

(*American Journal of Medical Sciences*, Jan. 1853.)

The chief purport of this paper is to show that arcus senilis is not necessarily a test of the existence of fatty degeneration of the heart. It is admitted that the arcus senilis is a common accompaniment of fatty degeneration of the heart, but not the converse—that fatty degeneration of the heart is a common accompaniment of arcus senilis. In support of this opinion, Dr. Hoskins gives a tabular history of 12 cases, in which the arcus was present without there being any reason to suspect any fatty change in the heart.

"Out of the 12 cases, (he writes,) it will be noticed that only two laboured under any symptoms referable to the heart, and only one where any organic alteration of that organ could be at all suspected, the palpitation, in the other case, being clearly of hysterical origin. One case laboured under phthisis pulmonalis; one under indigestion; one had *paralysis agitans*, and one neuralgia. Six of the 12 subjects, or one half, were healthy individuals. Three, or one fourth, were under forty years of age, and two of them were quite healthy; the other had indigestion. One, or one twelfth of the whole, was under thirty, and he a young man of remarkable health and vigour."

## Art. 46.—*On the Diagnosis of Aneurism of the Aorta.*

By Dr. Crisp.

(*Pamphlet*, Teape and Son, 1851.)

The following remarks upon a very difficult subject, are taken from the Appendix to Dr. Crisp's Jacksonian Prize Essay on 'the Structure, Diseases, and Injuries of the Blood-vessels.' Their truth and importance are self-evident.

*Symptoms and Diagnosis.*—If we are to believe some writers on aneurism, the diagnosis of this disease is generally unattended with difficulty, and it is possible that by long practice, and an acute sense of hearing, *they* may be able to detect the presence of aneurism, although most ordinary listeners fail to do so; and, amongst this number, I class myself—for I am obliged to agree with the assertion of the great Laennec, "that there is no sign pathognomonic of thoracic aneurism, except the external tumor." I admit that a tolerable degree of accuracy may be arrived at in many instances, but there is no certainty of the existence of aneurism, unless the sac pushes out the parietes of the chest.

Dr. Bellingham, whose experience and zeal in the investigation of this disease, entitle his remarks to great attention, believes "that there is a double sound in thoracic aneurism, irrespective of the sounds of the heart; that the second sound is produced by the backward current of the blood; that the aneurism is comparatively unfilled; and that the aneurismal sac is inelastic." Dr. Bellingham, whose object, like my own, is the investigation of truth, will pardon me, I am sure, for differing from him in all these opinions. I believe

that a double *bruit*, seldom or never exists in thoracic aneurism, irrespective of the heart's sounds. What nicety of hearing can distinguish the sounds in aneurism of the ascending aorta, (the most frequent situation,) from those of the heart? How an aneurismal sac can be "comparatively unfilled," and the sac at the same time be inelastic matter, are beyond my powers of comprehension? I could amuse the reader, if I were to quote the description of the various sounds heard by different narrators, but this double sound, strange to say, has generally been undetected by English ears. Gendrin believes that a double sound (*bruit de choc*) is always present in all aneurisms of the large arteries,(?) and to show how far hair-splitting may go, he says, in *true* aneurism,(?) there is but one impulse and one sound, whilst in *false*, there are two sounds and two impulses. Dr. Bellingham objects to Gendrin's explanation of the second sound, and attributes it to regurgitation into an inelastic, and unfilled sac; and he accounts for the absence of a double sound in abdominal aneurism, by supposing that a sufficient quantity of blood does not regurgitate into the sac. But, surely, in the horizontal position, regurgitation would be as likely to take place in the abdominal aorta as in the arch, or descending portion of the thoracic? It is scarcely necessary to stop to refute the opinion, that an aneurismal sac is inelastic—its very throb is an indication of elasticity: that portion of it formed by the cellular coat is inelastic; but not so the yellow tissue of which nearly all aneurisms are partly composed. In an aneurismal sac now before me, which has been in Goadby's solution for several years—I find the greater part of it very elastic.

As two peas in a bushel, two pebbles on the sea shore, and two aneurismal sacs, are never exactly alike, so are the auscultatory phenomena influenced by the form of the dilatation, the quantity and consistence of its contents, the condition of its walls, and the state of surrounding organs. Let the reader examine a few hundred specimens of aneurism and then inquire whether exactly the same sound *could* be present in any of them?

When a patient, whose symptoms lead the practitioner to believe that thoracic aneurism may exist, the first interrogation should be, as to the occupation and previous habits of the individual, and he should be particularly questioned respecting the occurrence of blows, falls, or violence of any kind; the examiner always remembering that small thoracic aneurisms may exist for a long time without producing much inconvenience, and that in some cases where the yellow tissue of the artery is only ruptured, little or no pain may present. It is probable that many aneurisms originate in early life from the partial fracture or separation of the fibres of the elastic coat, when the artery is free from disease. After the above inquiry the blood-vessels of the arms should be carefully examined, and the veins of the neck must not escape observation. The palms of the hands may then be passed over both sides of the chest, for the purpose of detecting abnormal impulse and protrusion of the thoracic walls. The stethoscopic examination along the spine is most important, but it must be recollected, that the cardiac sounds are sometimes heard in all parts of the chest. After careful percussion and auscultation, if abnormal *bruit* is detected, the effect of position and motion should be tried, and the question asked, whether the *bruit* may not arise from valvular, or other disease of the heart, from a roughened state of the arterial tube, or whether a tumor (probably malignant) may not, by interfering with the blood-current, occasion it? Œdema of the hand, pain in the arms and fingers, the condition of the voice, the appearance of the countenance, the character of the pain (if present), state of the breathing, hæmoptysis, previous diseases, and hereditary predisposition of the patient, are all important subjects for investigation.

If the above matters are carefully attended to, I think *generally* a correct

opinion may be arrived at in the diagnosis, but it is always easier to say that this disease is *not* present, than to foretell its existence.

I caution my junior readers against the inference that any sounds, alone, are to be taken as pathognomonic of thoracic aneurism. Double sounds, single sounds, in all varieties from the grating rasp of the saw, to the murmur of the gentle breeze may be heard, and yet not denote aneurismal dilatation. Common sense and pathological observation, as in all medical deductions, are more important in this inquiry than "*sonoriety*."

### (D.) CONCERNING THE ALIMENTARY SYSTEM.

ART. 47.—*Notice of the Efficacy of Chlorate of Potash in Ulcerated Stomatitis and Cancrum Oris.* By J. H. BABINGTON, M.B.

(*Dublin Quarterly Journal of Medicine*, Feb. 1853.)

On reading Dr. Duncan's practical paper, in the last Number of the 'Dublin Quarterly,' on the use of mercury in cancrum oris, (a mode of treatment of which I do not question the efficacy,) my recollection was called to an epidemic of ulcerative stomatitis, that occurred in the Coleraine Union Workhouse in 1849, in which I used chlorate or potash with great success.

The symptoms were as follows: The lips, gums, and lining membrane of the cheeks, red, swollen, and tender to the touch; tongue swollen and indented by the teeth, covered over the surface with a foul tenacious coating, and in some places ash-coloured sloughs. There was great pain when the cheeks were moved, touched, or any food introduced into the mouth, together with considerable general fever, and the secretions vitiated.

The first morning I observed the disease, two only complained; next day three more cases were presented; and on the fourth morning I had fifteen on the sick list, all from amongst the boys in the workhouse.

The treatment adopted was a mild aperient of rhubarb and magnesia, and the administration of chlorate of potash, dissolved in water sweetened with syrup, in doses of four grains every fourth hour; the mouth was also washed with a weak lotion of solution of chloride of soda. They all recovered in about six days. I treated one case with alteratives and tonics, and it was three weeks before it got quite well; thereby proving the efficacy of the chlorate of potash. [Here is no novelty: the medicine has been long given in such cases, and was first recommended by Mr. Hunt.]

ART. 48.—*A Remarkable Case of Sarcina Ventriculi, with Analyses, Microscopical and Chemical, of the Fluid Vomited, and of the Urine.* By Dr. A. HASSALL.

(*Lancet*, Jan. 29, 1853.)

This case occurred in the person of a member of the medical profession, by whom Dr. Hassall was supplied with a very interesting and detailed history of the symptoms. Its chief features were occasional severe gastrodynia, constant cardialgia, intense acidity of the

contents of the stomach, frequent vomitings, distension from flatus, obstinate constipation, and usually an alkaline condition of the urine from fixed alkali, with copious deposition of the earthy phosphates. Dr. T— had suffered from this distressing affection off and on for upwards of fifteen years, the symptoms having, however, within the last year become much aggravated. He consulted some years since Dr. Elliotson, Dr. G. Tothill, Dr. James Johnson, and, within the last five years, the late Dr. Prout; and took charcoal, gunpowder, bismuth, prussic acid, creosote, nitrate of silver, and nitro-hydrochloric acid, without experiencing the least benefit, the latter remedy, indeed, increasing greatly the pain without lessening the severity or frequency of the vomitings. Dr. Hassall subjected the urine and vomited matter to careful microscopical and chemical examination. The deposit of earthy phosphate, usually so abundant in the night excretion, examined by the microscope, was found in one sample to consist chiefly of a great number of long and slender crystals, stretching right across the field of vision, pointed at either extremity, frequently split or divided into smaller secondary crystals, and more or less aggregated into bundles. The deposit procured from another sample consisted principally of the same crystals, although they were very much larger, and of a somewhat different shape. Their form, as nearly as could be ascertained, was that of a six-sided prism, the extremities being usually pointed, and furnished with two unequal facettes; not unfrequently, however, the ends were truncated, and occasionally oblique. The deposit was examined chemically more than once both by Dr. Hassall and Dr. Letheby, and was found to consist chiefly of phosphate of magnesia, with some ammonia, and a little phosphate of lime, the latter substances being present as impurities, and forming, in all probability, no part of the composition of the crystals. Dr. Hassall stated that, on referring to the works of Griffiths, Owen Rees, Golding Bird, Bence Jones, and some other writers, he did not find these crystals either figured or described, although they were by no means uncommon, and he had himself detected them in several cases. In the vomited matter placed under the microscope, Dr. Hassall discovered the *sarcina ventriculi* in great abundance, presenting all its usual characters. Intermixed with it were numerous starch-corpuscles of wheat, many sporules of the common fungus, *Penicilium glaucum*, as well as some sporules of another kind of *fungus*, which he had not seen described in connection with *sarcina*, and which resembled rather closely in form and size the cholera-sporules of Dr. Swaine. In the vomited matter subjected to an able chemical analysis by Dr. Letheby, considerable quantities of free hydrochloric and butyric acids were discovered. Dr. Hassall considered that in the discovery of the sarcina he had obtained an important clue by which many of the most urgent and distressing of the symptoms of the case were to be explained, and by which also the treatment to be adopted with a chance of success must be regulated. Thus the sarcina satisfactorily explained the intense acidity of the contents of the stomach, upon which the vomitings, to a great extent depended; these, in their turn, by interfering with nutrition, accounting for the many symptoms of prostration and debility presented, and particularly for the alkalinity

of the urine. Dr. Hassall next considered the indications which ought to be followed out in the treatment of this case. One of the chief of these was certainly to destroy the fungus; and this he thought was to be effected by two means: first, by the regular and systematic exhibition of alkalies, so as to neutralize the acidity of the contents of the stomach, and which acidity formed a condition essential to the development of the parasite; and, secondly, to administer some remedy capable of exerting a destructive effect on the fungus. With these objects in view, infusion of quassia and bicarbonate of potash were prescribed in mixture, and doses of the sulphite of soda separately, the diet being also regulated. After the lapse of a short time, Dr. Hassall learned, that although the sulphite of soda had not been taken, but only the quassia and bicarbonate of potash, yet a marked and encouraging improvement in the symptoms had taken place, the frequency of the vomitings especially being diminished. Subsequently the sulphite of soda was administered; this remedy, together with the potash and quassia, having the effect of stopping entirely the vomitings for a period of five weeks—in fact, up to the date of Dr. Hassall's communication to the Society. Not only had the vomitings ceased, but the bowels, before so obstinately confined, had become perfectly regular; there was no distension of the stomach, or flatulence; the urine was clear, free from deposit, and passed in normal quantity; exertion does not now cause fatigue, as formerly, and the sleep is invariably sound and refreshing.

### Art. 49.—*On Perforating Ulcer of the Stomach from Non-Malignant Disease.* By Dr. Crisp.

(*Pamphlet*, Teape and Son, pp. 22.)

In this pamphlet Dr. Crisp relates the cases of this disease, and glances at the particulars of thirty-nine cases recorded in various British journals since 1843. This affection, in Dr. Crisp's opinion, is far most common in unmarried chlorotic females, and want of uterine action is considered as the chief predisposing cause. Many cases are stated to have been probably mistaken for acute peritonitis, a very rare disease.

The following remarks and case will illustrate the signs and symptoms of this serious disease.

Several treatises upon this disease have been written by continental physicians during the last fifteen years. The subject, however, has been but little attended to in this country; for, although a large amount of information exists in the medical journals in the form of cases and short essays, but few communications of a comprehensive character are to be met with. Among the few, I may mention particularly the papers of Messrs. Taylor and Williamson, the former in the 'Guy's Hospital Reports' (1839), and the latter in the 'Dublin Journal' (1841). The various authors that I have consulted differ much respecting the nature, cause, &c., of these lesions, and the discrepancies appear to me to arise from the very common error, amongst medical writers, of drawing conclusions from a few facts. I shall endeavour to avoid this by selecting a large number of cases from which I can deduce my inferences.

Perforations of the stomach arise from three causes, viz., external violence, poison, and from simple or malignant ulceration. The perforation from the action of the gastric juice I believe is invariably a post-mortem occurrence, and therefore is not included. Spontaneous perforations of the stomach have been divided into two classes, viz., those arising from malignant disease, and those produced by simple ulceration. It is my intention in the present paper to notice only the latter, which are of much more frequent occurrence, and in a medico-legal point of view, of greater interest. The best pathological description I have met with of this disease, is in Baillie's 'Morbid Anatomy,' (1795. American edition.)

"Opportunities occasionally offer themselves of observing ulcers of the stomach. These sometimes resemble common ulcers in any other part of the body, but frequently they have a peculiar appearance; many of them are surrounded with hardly any inflammation, nor have they irregular eroded edges, as ulcers generally have, nor is there any particular diseased alteration in the structure of the stomach in the neighbourhood. They appear very much as if some little time before a part had been cut out from the stomach with a knife, and the edges had healed, so as to present an uniform smooth boundary round the excavation which had been made. These ulcers sometimes destroy only a portion of the coats of the stomach at some one part, and at other times destroy them entirely. When a portion of the coats is destroyed entirely, there is sometimes a thin appearance of the stomach surrounding the hole, which has a smooth surface, and depends on the progress of the ulceration. At other times the stomach is a little thickened surrounding the hole; and at other times it seems to have the common natural structure."

The symptoms produced by these ulcers are often so slight that their presence in the young has seldom been detected, and not until the frightful train of symptoms which follow the perforation, does the medical attendant suspect their existence. For a few years, and sometimes only for a few weeks, previous to the fatal termination, the patient suffers from dyspeptic symptoms, occasionally of a severe character; such as violent pain in the region of the stomach, vomiting after eating, flatulency, acid eructations, emaciation, &c., but more frequently the symptoms are only those attendant upon ordinary cases of stomach derangement, and in some few instances the individual has appeared in perfect health. The symptoms produced by perforation of the stomach* are so peculiar that I can scarcely imagine it possible for a man who has seen one case to fail in his diagnosis.

The lesion occurs generally a short time after a meal, and the patient is often in a tolerable state of health up to the time of the perforation. The symptoms are as follows:—

1st. *Violent* and *sudden* pain in the region of the stomach, extending soon over the whole abdomen, attended, in most cases, by vomiting.

2d. The abdominal muscles at first spasmodically contracted and drawn into knots.

3d. The countenance extremely anxious, the patient often expressing a conviction that death is inevitable.

4th. The pulse at first quick and sharp, afterwards small and thready: indeed, the latter symptoms are those generally attendant upon the last stage of peritoneal inflammation.

* The symptoms attending perforation of the intestine are less severe in the first instance, and death does not generally take place so early as in stomach perforations. Perforations of the intestine usually occur after fevers.

5th. The intellect is generally unaffected. Some patients have complained after the administration of medicine, that it has "passed over the belly."

The symptoms, of course, vary somewhat in different instances, but the chief characteristics are the *sudden pain, extreme anxiety of countenance*, and the *abdominal spasm.*

Case 1. Dec. 26, 1837. Half-past two, p.m., I was called to A. W., ætat. 20, who about eleven o'clock was seized with sudden pain in the region of the stomach extending over the abdomen. She was that morning as well as usual, and ate a hearty breakfast of bread and butter (three or four slices), a round of toast, two cups of coffee, and one of tea. Her mother gave her two drops of essence of peppermint, and afterwards went to a chemist's for a draught to relieve spasm; this she took and vomited immediately; the matter ejected appeared to consist of bread and butter and coffee; her mother than gave her a table-spoonful of brandy, which was also ejected.

I learnt the following particulars from Mrs. W.:—When six years of age she had extensive inflammation of the leg and thigh; this was followed by great debility, which lasted for twelve months. Since that period she has never been confined to her bed, but her health has been in a delicate state. For some months she has complained of pain after eating, followed by vomiting; she also had pain when leaning towards the left side; she had a pallid, chlorotic appearance, but was plump and muscular. For many years has been in the habit of eating large quantities of black and green tea. About eighteen months since she lived as servant to a gentleman who was in the habit of taking calomel, which he kept in the house; believing that she was bilious she took some of this medicine, unknown to her master, and pytalism was produced. She has for some years been subject to palpitation of the heart, which was produced by any sudden excitement. Had menstruated regularly; the discharge light coloured, and very small in quantity. When I first saw her she presented the appearance of a person who had taken poison. The countenance extremely pallid and ghastly; skin warm and dry; the pupils rather contracted; she had had vomiting, but I could not see the ejected matter; the pulse about 100, small, and rather feeble; she complained of pain over the whole abdomen, which was rather increased by pressure; the bowels were relieved this morning early; the abdomen not distended. I ordered leeches and hot fomentations to the abdomen, gave a scruple of ipecacuanha, and part of a sulphate of magnesia mixture every four hours. Eight, p.m. Much the same as when I last saw her. The powder produced vomiting, but her mother says only watery fluid was ejected. The pain slightly relieved; bled her to eight ounces (syncope produced). A grain and a half of opium to be taken directly, and repeated every four hours. 27th. Nine, a.m. No sleep; pain not relieved; the countenance more ghastly than yesterday; pulse very feeble; skin cold; says she thinks she should be better if the bowels were acted upon; has passed no water since twelve o'clock last night; bladder not distended; the abdomen hard, and rather tympanitic; the blood taken neither cupped nor buffed. An aperient mixture, with sulphate of magnesia, to be taken every four hours, and a purgative enema to be administered directly. Died at half-past ten, a.m. During the night complained of excessive thirst, and drank a quart of toast and water.

*Examination twenty-eight hours after death.*—Messrs. Waterworth and Beane present. External appearance of the body plump, firm, and muscular. The skin very white, especially on the face; the abdomen considerably distended; the parietes covered with about half an inch of fat: on cutting into the peritoneal sac a large quantity of fetid gas escaped.—*Abdomen.* The

peritoneum was covered with a layer of soft yellow lymph; its cavity contained about three pints of whey-like fluid, with flakes of lymph. There was much lymph on the liver and intestines, but the convolutions of the latter were not adherent. The peritoneal coat of the stomach and intestines not reddened or congested. On pressing the stomach gently, fluid was seen to issue from a small round aperture with smooth edges, which would admit the passage of a common-sized pea: this opening was situated at the posterior part of the lesser curvature of the stomach, about an inch from the concavity, and midway between the cardia and pylorus; directly opposite this aperture, on the anterior part of the stomach, was another opening about the size of a shilling; with smooth defined edges; the stomach was carefully removed (its contents being preserved), and the interior presented the following appearances:—Mucous lining much corrugated, having a soft, pulpy appearance, but not easily detached; no redness or ecchymosis on any part. The edges of the small opening were thin to the extent of one sixth of an inch, but the edges of the anterior aperture were perfectly smooth, and had the appearance of having been cut out with a sharp instrument. The fluid on the mucous membrane had not an acid taste. At the greater curvature, about the middle, was a small ulcer with the edges slightly raised; the mucous membrane in other parts appeared thinner than natural. The lining membrane of the œsophagus was of a purplish colour, but there was no abrasion. The inner lining of the intestines covered with a whitish mucus; the contents fluid and resembling that in the cavity of the abdomen, though somewhat darker; no inflammation or congestion in any part. The large intestines healthy; the excrementitious matter of a natural consistence and appearance. The liver very white, but its structure normal. The spleen soft and pulpy. Nothing remarkable was observed about the uterus and its appendages, except that the Graafian vesicles were more numerous and larger than usual. The bladder was empty.—*Thorax.* The pericardium contained about an ounce of serum; both ventricles of the heart hypertrophied; no blood in their cavities. The auricles contained dark blood adherent to the sides. The valves and every other part normal. The structure of the lungs healthy. Brain not examined.

## Art. 50.—*The Treatment of Irritable Rectum with Constipation by Opiates.* By a Clinical Clerk of Dr. Barlow.

(*Medical Times and Gazette*, Oct. 30, 1852.)

Among the diseases to which the aged are subject, constipation is one of the most common, and an irritable condition of the lower bowel one of the most distressing. As the two affections are commonly antagonistic to each other, their occasional concurrence may perhaps seem to require some explanation. The fact is, the irritability affects not the whole rectum, but merely its outlet, and the costiveness, easily permitted by the torpidity of the upper tract, is chiefly due to the painful condition of the anus, which induces the patient to avoid as much as possible all efforts for the expulsion of fæces. Thus, the two states act and re-act to the exacerbation of each other; the hardened matters give pain in the passage, and the fact of their doing so induces their retention for a longer time than ordinary, thus permitting of their becoming still more indurated. Not unfrequently this painful state of the verge of the rectum is accompanied either by

small hæmorrhoidal excrescences, or by cracks and superficial fissures in the skin, just at its point of junction with the mucous membrane. We have lately seen several severe cases of this description among the patients under Dr. Barlow's care, and have been much pleased with observing the result of a plan of treatment which mainly consists in the free administration of opiates. It is only by a correct appreciation of existing conditions, both local and general, that the probable effect of any given remedy can be with any certainty predicated. This truth forgotten, the results obtained by medication will often seem inexplicable, or even the known properties of our most familiar drugs reserved. Thus, in the affection under consideration, the use of opium is almost always followed by gentle relaxation of the bowels, not because that drug possesses any purgative properties, but simply because it relieves the condition on which the constipation depended.

Sarah James, aged 66, thin, and rather pale, was admitted September 3, 1852, on account of obstinate costiveness, attended with great pain each time the bowels were relieved. Seven years previously she had suffered from piles, which were then excised, and left wounds which did not heal for a considerable time. Ever since that operation, more or less pain and smarting has existed about the anus, and the bowels had progressively become more and more difficult to move. She had been in the constant habit of taking purgatives, chiefly castor oil, of which a very full dose was usually necessary to produce any effect. Blood was occasionally passed, and slime and matter very frequently. She had been under much medical care, but for several years had never known what it was to pass her motions without great pain; the discharge of pus had, however, decreased of late. During the week previous to admission her sufferings had been much aggravated; there had existed an almost constant desire to go to stool, on which occasions nothing except a little dirty water passed, and the repeated use of clysters and large quantities of castor oil had only succeeded in removing small portions of scybalæ.

On admission, she was first subjected to an examination by Mr. Poland, with a view to ascertain whether any disease existed about the parts capable of relief from surgery; but, as nothing was found, Dr. Barlow retained the case under his care, and prescribed for her pil. sapon. c. opio, gr. v, ter die.

Sept. 12.—The pain about the anus has nearly disappeared, and the watery evacuations have ceased to occur. This morning an almost natural motion passed without producing much pain. Pt. pil.

17th.—She still continues in a very comfortable condition, but the bowels do not act quite so much as could be desired. Rep. pil., cap. ol. ricini, 3ij, alternis auroris.

Oct. 12.—The same plan of treatment has been continued up to the present date. The bowels have acted regularly once or twice after each dose of oil, and without any pain whatever. In these respects, she states that she has not been so comfortable for many years. The opium has not in any way disagreed with the digestive functions, but appears, as is not unfrequently observed in old people, to have had quite a beneficial effect on the system generally.

## (E.) CONCERNING THE GENITO-URINARY SYSTEM.

### ART. 51.—*On Albumen in the Urine of Various Diseases.* By M. HELLER.

(1. *Archiv für Path. Chem.* i, 8. 2. *Medico-Chir. Rev.*, Jan. 1853.)

Heller asserts that albumen is present in the urine in all kidney-lesions, though sometimes in small quantity, and that it exists in many other diseases, and often in greater amount.

1. *Pneumonia* and *Tuberculosis acuta.*—At the commencement of exudation, while yet the chloride in the urine is in undiminished quantity, no albumen can be found. As exudation increases, and as the chloride in the urine diminishes, a very small quantity of albumen appears, and continues for a long time. This appearance is not constant, but is very frequent. The greater the albumen, and the less the chloride in the urine, so much the worse is the prognosis.

2. *Pleurisy.*—Albumen does not appear so frequently, even when the chloride is much diminished. In the period of absorption it sometimes occurs, and is attended with carbonate and hydrochlorate of ammonia.

3. *Acute Liver-Affections.*—In chronic or subacute inflammations, where the chloride of the urine is diminished, albumen appears as in pneumonia.

4. *Pericarditis* and *Endocarditis.*—In the first case albumen sometimes occurs; in the last very seldom, even when the chloride is much diminished.

5. *Peritonitis.*—Albumen is frequently found, and continues sometimes long after the customary amount of chloride has reappeared, and morbus Brightii is then, perhaps, left.

6. *Metritis* and *Eclampsia Puerperalis.*—As in peritonitis.

7. *Cholera.*—More or less albumen.

### ART. 52.—*On the Development of Torulæ in the Urine, and on the Relation of these Fungi to Albuminous and Saccharine Urine.* By Dr. A. HASSALL.

(*Medical Times and Gazette*, Dec. 4, 1852.)

The author divided the subject into two parts: the first comprising the development of certain fungi in urine containing albumen, and the second embracing the growth of torulæ in saccharine urine. Having quoted from the writings of Drs. Griffith, Owen Rees, and Golding Bird, the several descriptions given by them of torulæ in urine, and which represented the opinions entertained up to this time, he proceeded to quote the opinions of Dr. Bence Jones as to the value of the presence of torulæ, who thought that they were by no means diagnostic of saccharine urine; and the author held that a considerable discrepancy of opinion existed as to the value of the torulæ test as indicative of the presence of sugar in the urine. He then described the results of his own observations on the development of these organic forms in the urine. At different periods a number of samples of non-saccharine urine was set aside, some acid, some alkaline, and others albuminous. The changes that ensued were observed and registered from day to day. In a large proportion of the samples,

fungi were quickly developed, presenting very distinct and characteristic conditions of development, all of which were after a time ascertained to belong to one and the same species. The author described three distinct stages in the growth of this plant, and he enumerated these separately, under the heads of sporules, thallus, and fructification. Of the sporules, two kinds were noticed; the first appeared in a very short space (regulated much by temperature), as innumerable minute vesicles or cells, of a globular form, with bright centres and dark outlines. With a higher magnifying power, the shaded outline disappeared; the cavities of all were occupied by a fluid containing granules. In a short time the sporules multiplied rapidly, forming distinct circular patches, and ultimately a scum on the surface of the urine. The elongation of the sporules was not constant, for the development sometimes ceased with the formation of the globular sporules. When the condition of the urine favoured the growth of the fungus, the sporules then quickly elongated themselves, resembling short threads, having rounded extremities; a further elongation took place, and filaments were formed, which consisted of cells placed end to end, and enclosed in a common transparent membrane. From this condition, which is attained by the second day, the fungus passes into the higher state of the thallus. The second kind of sporule the author designated vesicles; they were much larger than the ordinary sporule; they were globular, and from each proceeded one, two, or three buds or shoots, which gradually became filaments, at first simple, but ultimately branched, forming, as the sporules did, the thallus. In some urine the growth of the fungus went no further than to produce sporules or vesicles; at this point all further development ceased; while in others the growth progressed to the thallus and the complete stage of aerial fructification. The author minutely described these two stages, which were rendered interesting and intelligible by a number of beautifully-executed microscopic drawings of the fungus in its several stages of development. This fungus was developed in twenty-four out of thirty-two samples of urine; in thirteen, the development did not proceed beyond the stage of sporules; in two it was arrested in the state of thallus; in the remaining nine it reached the perfect condition of aerial fructification. The conditions most favorable to its growth were a state of acidity of the urine; it was not present in neutral or alkaline urine, but it appeared alike in albuminous and non-albuminous urine, provided the fluid was acid; and this seemed to be a condition essential to its production. The author then entered upon the inquiry, whether this fungus was a new species, or was it identical with one already known and described? He came to the conclusion that it was identical with the well-known *Penicilium glaucum*, a common fungus, and constantly produced in decaying animal and vegetable matter. The author's conclusions with respect to the development of *Penicilium glaucum* were, that this fungus was frequently developed in urine; that the conditions necessary for its growth were—animal matter, especially but not exclusively albumen, an acid solution, and oxygen; that it may be developed at will in a variety of animal substances, as in solution of white of egg acidified with acetic acid; that although the plant does not make its

appearance in neutral or alkaline urine, no matter how much albumen be present, yet that it will quickly become developed in these by acidifying such neutral or alkaline solution by acetic, phosphoric, or other acids; that its presence may, to a certain degree, be accepted as an indication of acidity of the urine; that this fungus is no indication whatever of the presence of sugar nor even of albumen, as a normal quantity of epithelium appears sufficient to induce its growth. The second part of the paper consisted of an investigation into the development and growth of torulæ in saccharine urine. Allusion was made to the difference of opinion that prevailed as to the value of the torulæ test for sugar in the urine, and the author was desirous of ascertaining whether the torulæ contained in diabetic urine were not characterised by such peculiarities as would constitute a satisfactory test for sugar. Samples of diabetic urine were placed in distinct vessels, some of which were freely exposed to the air, others in bottles lightly corked, and a third class enclosed in closely stoppered vessels. A minute description of the changes observed was then recorded; the principal of these were turbidity of the clear urine in two or three hours after being voided, passing into a milky appearance; in twenty-four hours, cloudy, gelatinous-looking masses appeared, suspended just below the surface; entangled in these masses were bubbles of gas, afterwards proved to be carbonic acid, and separating from time to time, and escaping into the air. By the fifth day the gelatinous masses had disappeared, some having subsided to the bottom, while others had merged into a fawn-coloured stratum, floating on the surface, and having the consistence and appearance of beer yeast. This stratum increased in consistence, and formed a coherent layer, and presenting on its surface a woolly and filamentous appearance; and, lastly, a crop of delicate, transparent threads became developed on the surface, bearing on their summits minute spherical heads, of a black colour. These successive changes were visible to the unassisted eye; but the microscope became necessary to determine what the peculiarities might be appertaining to these several stages of change. The cloud-like masses were then found to consist of the minute sporules of a fungus imbedded in a mucoid base, and these masses constituted the first stage of the development of the fungus. The author then carefully traced the growth of this fungus from its sporule stage to that of thallus and fructification. (This part of the paper was also illustrated by numerous very carefully executed drawings of the fungus in all its stages of development.) The conclusion derived from this examination of the mode of growth and development of the fungus of saccharine urine was, that it was a very different species from that treated of as the *Penicilium glaucum;* and, further, that a comparison of the diabetic fungus with the yeast plant showed that the two were identical. After alluding to the nature and composition of the iridescent pellicle thrown up on the surface, the author noticed the fact, that diabetic urine frequently contained very large quantities of phosphate of lime in a crystallised state. From these investigations the author was led to the following conclusions:—That in saccharine urine, a distinct species of fungus was developed, which was identical

with the yeast plant; that it passed through three distinct phases of growth, each of which is characteristic of the species: that as it was developed in urine in which the presence of sugar could not be detected by chemical re-agents, it thus became an important means of diagnosing diabetes in its earliest stage. The conditions necessary for its development were, free exposure to the air, an acid liquid nitrogenous matter, grape sugar or glucose, and a moderate temperature. By exclusion of air the fungus was not developed, and a limited exposure ensured an incomplete growth. Sugar might even be present in some cases, and yet, from defective acidity the fungus would not be fully developed; and in such cases the growth of the fungus might be ensured by the addition of phosphoric, or even of a solution containing carbonic acid. The presence of this fungus indicated the vinous fermentation, and this transformation of the sugar into alcohol was limited to the period of the sporule stage: the thallus and aerial fructification exercised little or no influence in promoting this change. In those cases in which the fungus was only partially developed in consequence of imperfect access of air, the sugar was converted chiefly into acetic, and a portion sometimes into oxalic acid: and that when the fungus was not developed from exclusion of air, the sugar was converted into lactic, acetic, and butyric acids, and also probably aldehyde. The *Penicilium glaucum* was not unfrequently associated with the sugar fungus, as the conditions requisite for its development are generally present in saccharine urine; and lastly, that in very many of the specimens of urine in a case of incipient diabetes, large quantities of crystallised phosphate of lime were detected.

### Art. 53.—*Presence of Sugar in the Urine of Epileptics.* By MM. Michea and Alvaro Regnoso.

(*Gaz. Méd. de Paris*, and *Dublin Medical Press*, March 9, 1853.)

The urine of epileptics after an attack contains sugar, as we have distinctly proved by a number of experiments, except that all the usual tests will not suffice for its detection. Caustic potash, which usually shows it in diabetic urine, does not produce any reaction in that of epileptics. The saccharometer is also useless, as it is not sufficiently delicate or convenient. The best and most decisive proofs are fermentation and the action of Barswell's fluid. So that the latter may furnish certain and undoubted results, certain precautions must be taken. The urine must first be treated with acetate of lead concentrated, and then the fluid being added, the whole is boiled. Without these indispensable precautions, so as to deprive the urine of its organic matter, the presence of sugar cannot be sufficiently proved, even where it produces reactions capable of making the existence of sugar be suspected, when there is not a particle in the urine.

ART. 54.—*The Action of Liquor Potassæ on the Urine, in Health.* By E. A. PARKES, M. D., Professor of Clinical Medicine, and Physician to University College.

(*Medico-Chir. Rev.*, Jan. 1853.)

Dr. Parkes thus recapitulates the results of his long and laborious paper upon this subject:—

If this remedy be taken soon after meals, its action is that of an antacid. It combines with hydrochloric or with lactic acid, and then, doubtless, passes into the circulation. What appreciable effect it now produces is not indicated in the tables above given, but it does not increase either the water, solids, or sulphuric acid of the urine. If the liquor potassæ be taken into an empty stomach, it passes unneutralized into the circulation, and probably through the veins; in so doing it must produce an effect on the walls of the capillaries and small veins, but the extent of this cannot be known. As much as ʒij have been taken with only 4oz. of water, without causing epigastric pain or uneasiness (although it produced considerable temporary scalding of the mouth and throat), and without apparently producing any local effects in the stomach. In, usually, from thirty to ninety minutes after its entrance into the circulation,* an increased flow of slightly acid urine occurs, which contains the whole of the potash, organic matter differing considerably from that of ordinary urine, and a relatively large proportion of sulphuric acid; the phosphoric acid and the chlorine are less changed. Perhaps an organic acid (not uric, and probably not hippuric) is also present.

The explanation of these facts is, that an albuminous compound, either in the blood itself, or in the textures, has become oxidized; its sulphur, under the form of sulphuric acid, has united with potash, and, with possibly the changed protein-compound, is poured out from the kidneys. This oxidising effect of the liquor potassæ is no doubt assisted by exercise, and by copious draughts of water; but in the above experiments, exercise and fluid were abstained from, in order not to complicate the results. The amount of albumen or fibrine destroyed by one drachm of liquor potassæ cannot be considerable, but if the potash were continued in large quantities, oxidation could probably be pushed to any amount. The nitrate and acetate of potash did not in a *healthy system* have the same effects.

After the increased flow of urine, the quantity passed per hour falls slightly below the standard. It appears to resume its ordinary composition, but its exact condition at this period has not been determined. Some observations on urine in disease would lead me to infer that the uric acid will be found to be increased.

Such were the effects of liquor potassæ on the urine. The effect produced on other excretions was not obvious. The skin and the intestines appeared quite unaffected, and as all the potash was found in the urine, the reason of this is easily understood. In most of the experiments there were no subjective symptoms of any kind. On two occasions, there was rather sharp frontal headache, languor, depression, slight lumbar pain, and aching of the

* This does not sufficiently appear from the facts in the text. I subjoin some particulars of another experiment, made when the system was not quite in a state of health. At a quarter past 4, liq. potassæ ʒj, water ℥iv, was taken.

At a quarter to 5, ℥ij, ʒvj, were passed . . . . = ℥v, ʒij, per hour.
At a quarter past 5, ℥iv, ʒvij, were passed . . . = ℥$^{ix}$, ʒvj, per hour.
At a quarter to 6, ℥j, ʒij, were passed . . . . = ℥ij, ʒiv, per hour.

legs, after the large flow of urine. On the night of the 15th, when the flow of urine, which was proceeding at the rate of ℥iss per hour, was augmented in two and a half hours by ℥xiv, and no fluid was supplied to the system, the pulse became perceptibly small (almost thready) and slow; it remained equal and regular—there was no thirst, no shivering, and no nausea; the skin was dry and warm. In six hours the pulse had quite regained its force and frequency, and the other symptoms had disappeared without any fluid having been taken.

After the experiments were concluded, the general health did not appear impaired; it was, if anything, better than usual.

The effect of liquor potassæ on the diseased system is a much more difficult problem. The chemical conditions are not the same, and the effects of the potash are necessarily influenced by them. I will not now enter into this subject, but observe that it is necessary, when its oxidising effects are desired, to give the potash eight or ten hours after food, to drink moderate quantities of water, and if possible, to use exercise. The potash should be given pure, or with large doses of iodide of potassium, but unmixed with sugar. I may so far anticipate what will be hereafter said on this point, by stating that, administered in this way, it exerts a powerful effect on the exudations of inflammations, but appears less useful in the early stages, when an antagonistic force seems to be in action.

It remains to be seen whether the varying excretion of sulphuric acid, which is unaccounted for by diet and exercise, is occasioned by greater or less alkalinity of the blood producing variations in the amount of oxidation of the albuminous compounds.

## Art. 55.—*On the Employment of Urea as a Diuretic.*

By Dr. Tanner, L.R.C.P.

(*Medical Times and Gazette*, July, 1852.)

Dr. Tanner wishes to call attention to the diuretic properties of urea, and in order to this, he states that he has employed this substance with great benefit in certain obstinate cases of dropsical effusion. He first enters into some preliminary matters respecting the preparation of urea, in the course of which he states his preference for natural over artificial urea, and afterwards proceeds as follows :—

It was unnecessary (he says) to resort to experiment to prove that urea, medicinally administered, does not exert any deleterious or poisonous agency upon the system, because this had already been done by Dr. Todd. This gentleman injected half a drachm of urea into the vein of a dog, the only effect produced being an excessive secretion of urine, so that the place where the animal was kept was literally flooded in an hour or two by the frequency and quantity of his micturition. In the human subject a copious diuresis has been the only effect produced; in none of the cases in which I have employed it has it given rise to any unpleasant symptoms whatever. The ordinary dose, on first being used, is ten grains every six hours, dissolved in water flavoured with syrup; as its effects decrease, the dose may be augmented to a scruple or more. At the same time, its action should be aided, as that of all diuretics should be, by the free administration of diluents, as well as by keeping the skin moderately cool. From observation of the mode in which medicines are prescribed in the present day, I fear that by far too

little attention is paid to those collateral circumstances which assist the action of all remedies, and which in certain cases, if unattended to, render our efforts useless, effects being produced the opposite to those intended. Boerhaave, the great medical luminary of the seventeenth century, first pointed out that many diuretics may be so administered as to prove sudorifics; and Dr. William Alexander taught that "the salt of tartar and of nitre, though among the most powerful diuretics, when taken with large quantities of warm liquids, if the body be well covered, prove excellent sudorifics, and do not increase the quantity of urine."—*Experimental Essays;* London, 1770, p. 155.

None deny the truth of these observations: I would only intimate that they are not sufficiently attended to.

It would be worse than useless to occupy space by a recital of the few cases in which I have employed this agent as a diuretic. It may suffice to say, that, in the first instance, and the one in which I more particularly noted its effects, the quantity of urine secreted in the twenty-four hours previous to its administration was only fourteen ounces (high-coloured, acid, sp. gr. 1018), whereas, in the succeeding twenty-four hours, during which three doses of ten grains each were administered, the secretion amounted to forty-four ounces (pale, acid, sp. gr. 1013). The remedy was continued for the ensuing nine days, in doses of ten grains every six hours, during which period the urine varied in quantity from forty-nine to thirty-eight ounces. At the end of this time it was discontinued, as the dropsy had been temporarily removed; and, on again having recourse to it three weeks subsequently, its effects were as satisfactory.

In conclusion, I would remark, that urea has been prescribed before, especially by some French physicians. The object of these remarks, therefore, has been, not to introduce a new remedy, but to bring forward one which does not appear to have been sufficiently appreciated.

## Art. 56.—*Remarks on Prolapsus of the Anterior Wall of the Vagina, as an occasional cause of Fetid, Phosphate, Mucous Urine.*

By Golding Bird, A.M., M.D., F.R.S., F.R.C.P.

(*Medical Times and Gazette*, Jan. 1, 1853.)

It is by no means a very unfrequent occurrence for a physician to be consulted by females, (generally about their grand climacteric,) on account of their having great irritability of bladder, and the urine, when passed, being very fetid, and containing much ropy mucus. They generally complain of small quantities of the urine escaping on any sudden change of posture, or after violent coughing, and suffer no little distress from the offensive, fish-like odour which, in spite of every possible precaution, is observed to cling to them. It occurred to me several years ago, to observe that the cause of this state of urine was analogous—in some of the cases, at least—to that which exists in cases of enlarged prostate in the male. I mean a cause preventing the complete emptying of the bladder, and thus inducing the retention of a portion of urine sufficiently long to allow it to undergo decomposition. As no public notice has been taken of these really very distressing cases, I felt that an allusion to them might not be useless, especially as the mode of treatment is simple and successful.

Almost the first case in which I recognised the condition to which I am alluding, occurred about eight years ago in the person of a stout,

tolerably healthy-looking woman, who had been the mother of several children, and had ceased to menstruate for three or four years. She complained of great sense of distress in the lower part of the abdomen, with weight and bearing down. Walking was painful to her, and she was almost constantly tortured with a desire to empty the bladder. The urine was very offensive, and contained a large quantity of dense, ropy mucus mixed with phosphates. Suspecting the possible presence of a calculus, I introduced a catheter, but little urine escaped, and no concretion could be felt. But, on examining the vagina, a large pink-looking sac depended from its anterior wall, and almost separated the labia. She was indeed suffering from prolapsus of the bladder into a pouch formed in the anterior vaginal wall. By keeping the bladder emptied by the daily use of the catheter, the urine soon recovered its healthy appearance, and the mucus decreased considerably. The decomposition of the secretion in this vesical pouch had evolved ammonia, which had irritated the bladder and caused a copious secretion of mucus, loaded with the earthy salts, from its lining membrane. I sent the patient to my brother, Dr. Frederic Bird, as I believed no permanent cure could be obtained while the prolapsus existed. He applied the actual cautery to the anterior wall of the vagina, and the result was most satisfactory. After the slough came away, sufficient contraction occurred to prevent the formation of the vesical pouch, and the patient remained free from the ailment which had so long distressed her. I have met with so many analogous cases, that I am persuaded of the possibility of tracing a very large proportion of cases of fetid phosphatic mucous urine in the female to the imperfect emptying of the bladder from prolapsus of the anterior vaginal wall. Every one is well aware of the frequency of enlarged prostate as a cause of this state of the urine in the male, and the circumstances to which I have now drawn attention will be found to be as frequent a cause of this state in the female. In more than one instance, I have seen complete prolapsus of the uterus produce a similar result, evidently by drawing the bladder out of its position, and thus interfering with its being perfectly emptied at the will of the patient.

So far as I have seen, the ailment in question is nearly, although not exclusively, confined to females who are called upon for laborious exertion generally too soon after their confinements; or, in other words, to those who are most subject to uterine displacements. Certainly I have met with but very few cases in the higher ranks.

Although this little communication presents no very attractive features, I do feel it deserves a moment's notice, as I have seen many poor women deprived of the means of earning their bread as domestic servants, from the apparent incurability of the ailment. A few months ago, a lady who resides in my neighbourhood, expressed to me her deep regret that she was under the necessity of discharging her cook, a really valuable and trusty servant, on account of the urinous and even fetid odour which exhaled from her person. The poor woman had been out of place for a long time before entering this lady's service, on account of this very ailment. Her kind mistress had already obtained medical advice without any relief. On the patient calling on me with her urine, I found it to be strongly alkaline, exceedingly

fetid, and loaded with mucus and phosphates. She never had been married, but had suffered, as she fancied, from prolapsus of the uterus for many years. I found that, after emptying the bladder by the catheter as completely as possible, the urine secreted and removed, in half an hour was slightly acid, and scarcely fetid. I desired her to call on me early on the following morning, before attempting to pass water; and I then discovered the labia to be separated by a large soft red body, which turned out to be the depending anterior wall of the vagina filled with her prolapsed bladder. The use of an injection of infusion of galls three times a day into the vagina, the wearing of an abdominal support, with a perinæal pad, and the administration of iron and quina, with dilute phosphoric acid, soon restored her to health and comfort, and enabled her mistress to retain her services.

A nearly identical case occurred in the person of a favorite servant of a lady of rank, who had actually obtained for her the opinion of more than one of our most distinguished surgeons, as she was supposed to be labouring under calculus. She was ultimately completely relieved in a similar manner. But there was a curious fact connected with this case worth mentioning, and which I learned from the mistress, Lady C—. It appears that, after failing to obtain relief from legitimate sources, she had been induced to consult a "wise woman," residing in the village where her lady's country residence was situated. This sibyl told her that she laboured under "sinking of the womb," and that she could cure her. On her next visit, the woman introduced something into the vagina. The operation gave her very considerable pain, but, to her great delight, it certainly diminished the irritability of the bladder and offensive character of the urine. She retained this body for some months, when it fell out; and, on being shown me, I was rather surprised to find that it was a large smooth black siliceous pebble, so common in the beds of brooks and shallow streams. Whatever induced the old woman to make her diagnosis, her clumsy substitute for a pessary had afforded no small relief.

I would, then, in conclusion, express a hope that, whenever a female is found to labour under the annoyance and distress accompanying the excretion of fetid mucous phosphatic urine, the state of the uterus and vagina should be carefully examined when the bladder is distended, and I believe the ailment will be often cured by relieving the prolapsed state of that viscus by the means well known to every practitioner.

### Art. 57.—*The Effects of continued exposure to the Vapours of Oil of Turpentine.* By Dr. Elisha Harris.

(*New York Journal of Medicine*, Jan. 1858.)

The following interesting particulars respecting the effects of continued exposure to turpentine vapour are taken from a paper having the above title.

A labourer, writes Dr. Harris, employed in unlading a cargo of turpentine, began to suffer from vesical irritation and dysuria, at the close of his second day's labour in the ship; and at the end of the third day, when he applied to

me for relief, he presented all the symptoms of acute inflammation of the bladder. The urinary organs were in a state of excessive irritation; there were almost constant efforts at micturation, with the passage of but a few drops of bloody urine, or, more frequently, of blood only. The patient complained of severe pain in his back and loins, and he suffered from nausea, vertigo, and impaired vision.

The poor fellow had no idea of the true cause of his sufferings, but was confident that he had been maliciously poisoned. Upon inquiring I learned the nature of my patient's employment, and advised him to desist from his labours in the ship. I prescribed copious draughts of an anodyne and demulcent drink, a tepid bath, &c. In the course of forty-eight hours he had fully recovered. Immediately after this, there occurred in the same ship three similar cases.

By inquiry, I have since learned that the occurrence of such cases on board of vessels freighted with turpentine, and also among labourers employed in unlading such cargoes, is no unfrequent event in warm weather. The late Dr. F. P. Colton reported an interesting case that came under his care in the N. Y. Hospital. (Vide *Colton's N. Y. Hosp. Cases*, N. Y. Jour. Med., vol. v, No. 3.)

Recently I have had occasion to treat several cases of strangury, hæmaturia, eczema, ovaritis, &c., occurring in artisans whose labours expose them to the vapour of turpentine. They were employed in an extensive manufactory of India-rubber goods, where camphine is used as the solvent of the gum caoutchouc. Two of these patients were young females, and in them turpentine seemed to have induced very grave constitutional irritation. Long-continued insomnia and *malaise* had induced a state of nervous and mental irritability bordering on mania, and almost characteristic of the difficulty. During the first three months that these girls were employed in the factory, they suffered from *dysmenorrhœa* and *menorrhagia;* and subsequently, at the time they came under my care, they suffered from *ovaritis* and *leucorrhœa*, all of which had undoubtedly been caused by the terebinthine vapour which they were obliged to respire while in the discharge of their duties. The bodies of both these patients were extensively covered with an eczematous eruption, which soon disappeared, with all the other unpleasant effects of the turpentine, on their leaving the factory.

One of the young men employed in this factory suffered a higher degree of irritation of the urinary organs than I ever before witnessed. After repeated attempts to continue at his labours in the factory, he was obliged ultimately to leave the establishment.

The interest excited by these cases has led me to make inquiries, in reference to the prevalence of the irritating and poisonous effects of turpentine among artisans who are exposed to its vapour.

The intelligent conductor of an extensive manufactory of India-rubber goods, in this city, informs me that about two thirds of all his employées suffer considerable vesical irritation, strangury, vertigo, nausea, &c., during the first few months of their employment in the factory, and that after a time they nearly all become "*seasoned*," so that the terebinthine air no longer affects them. In this establishment it is the practice of those who suffer from the effects of the turpentine to take large and frequent doses of olive oil.

In the India-rubber factories of New Jersey, where camphine is used as the solvent of the caoutchouc, the same facts are observed as in this city.

In an extensive manufactory in New England, in which camphine is no longer used, I learn that when the terebinthine preparations were used, the workmen suffered very much. In this establishment the workmen were in the

habit of anticipating the effects of the terebinthine vapour, by subjecting themselves to a process of "seasoning," by taking repeated doses of camphine. In this and other manufactories, I find that females do not seem to have suffered as much as males from the peculiar *local* effects of the turpentine, but they have suffered much more from its effects upon the nervous system and the skin.

## Art. 58.—*Fatal Hæmaturia from peculiar Growths in the Bladder.* By Dr. Daniel Hooper, l.r.c.p.

(*Lancet*, Dec. 18, 1852.)

The following case presents many points of singularity and interest:—

James E—, aged thirty-four, a railway porter, a remarkably robust and well-made man, of sanguine temperament, steady habits, and good general health, and who never was the subject of any serious disease or accident, became a patient of the Surrey Dispensary under my care, on the 17th of November, 1852—four days before his death.

I ascertained that four months ago, without any premonitory illness or symptoms, he first observed blood in his urine. This being unattended with any pain or other symptoms, he continued his work for one month, the hæmaturia going on, and then feeling feeble and unwell, he applied for advice; and for the last three months has been under medical treatment. He told me, that during this period he had taken steel, lead, and turpentine without any effect, the hæmaturia having never once been checked from the first moment it was discovered. Once, about the end of September, he applied at the surgery of Guy's Hospital for relief from retention of urine, when a catheter was passed, which gave him intense pain, and relieved his bladder of an enormous quantity of bloody urine and coagula. After this, he said, the hæmaturia and failure of strength progressed rapidly. On November 17, at six p.m., I found him excessively bleached, complaining of headache, watchfulness, thirst, rapid prostration of strength, and tendency to syncope on any motion of the body. His tongue and mucous membrane of the mouth were almost white. Pulse 120, feeble, but jerking; skin dry, white, and feverish. He was passing from three to four pints of urine daily, of a very dark brown colour, with large, black, semimembranous, cystiform clots at the bottom of the vessel. One or two of these clots accompanied each emission of urine, and, in their transit through the urethra, occasioned great pain and sense of obstruction; although he always (except in the one instance mentioned) eventually got rid of them without instrumental aid. Their appearance was so unlike that of mere blood, that until Mr. Birkett had examined them microscopically, I was not convinced that they were such. His bowels acted daily, his appetite was not much amiss, and he was not conscious of any wasting of the body, which, to me, appeared fat and well-nourished. He had no pain anywhere, and every organ appeared healthy. I ordered him ten grains of Dover's powder, in two pills, at bedtime, and the following draught every four hours:—Gallic acid fifteen grains, diluted sulphuric acid fifteen minims, decoction of bark one ounce and a half. I also directed him to use a good diet, and to assuage his thirst allowed him cold spring water, with the addition of small quantities of alum and port-wine. After some hours he felt better; had slept, and was in good spirits. The same plan was continued, but the benefit was only temporary; and after try-

ing matico, &c., I found him much worse on the 21st. Pulse 100, very feeble, and less jerking; a sense of rapid sinking; slow, sighing respiration, cold skin, &c.; and death by asthenia and syncope occurred at four A.M., on the 22d.

*Post-mortem examination* at two P.M., in the presence of Drs. Gull and Wilks.—After turning aside the intestines, and removing an enormous quantity of fat, I dissected out and removed the kidneys, ureters, and bladder entire. The kidneys were large and very pale, but otherwise healthy, and weighed about seven ounces each. The right ureter was sufficiently dilated to admit the little finger; it led backwards to a dilated renal pelvis, and forwards to an opening in the bladder, so small as not to admit the point of a small blow-pipe. At this part of the bladder, on its internal surface, was a peculiar tufted growth, about the diameter of a sixpence, and one eighth of an inch in depth or thickness, and in its vicinity were two or three *much smaller* and more vascular-looking tufts, but possessing the same general character as the larger one. The bladder contained about three ounces of black coagula; its capacity was normal; its coats healthy; the muscular striæ, of course, very distinct; and the entire organ unusually pale. All the other organs were remarkably healthy, and not a trace of the disease found in the bladder could be found elsewhere. The heart contained a few dark coagula adhering to its auriculo-ventricular openings, and I need scarcely say that the whole body and its contents were almost bloodless. It was very evident that the disease was strictly local, and limited to these growths in the bladder; that these had effectually drained the body of all its blood, and so killed an unusually powerful and otherwise healthy man. It is, therefore, of the highest importance to ascertain their origin, nature, and treatment. Now, what should give rise to them in such a man, I leave others to guess. Their structure is peculiar. When shaken in cold water, they spread out into a dense arborescent form, so that one could not say what bulk they might have occupied, when distended with blood, during life. Under the microscope, they appear to consist of most beautiful arborescent tufts, which, on close examination, seem to be made up of immense numbers of capillaries, covered with columnar, narrowly-elliptical, epithelial cells, with large nuclei. Lastly, as treatment and cure are the ends of all our knowledge, it would be a great and a good thing to be able to recognise this disease during life, and so to treat it that we might enable the patient to live, even if we could not get rid of the structure; and this much I believe we *can* do, (prevention with our present ignorance of the cause is of course impossible.) Connecting, then, this case with two others which occurred to Dr. Gull, of Guy's Hospital, I am of opinion that when we find continued hæmaturia in a person in all other respects healthy and well, without any history or symptom of any kind to unravel the case, we may pronounce it to be one of this peculiar disease of the bladder, and treat it as such; and I would merely suggest, that in addition to some such treatment as that adopted in this case, the bladder should be injected with some powerful astringent, and the patient so kept alive.

### (F.) CONCERNING THE CUTANEOUS SYSTEM.

ART. 59.—*Case of Vitiligooidea, with Remarks.*
By W. H. RANKING, M.D. (Cantab.), Norwich.

(*Medical Times and Gazette*, Feb. 19, 1853.)

In the summer of 1850, the following case presented itself to my

notice, and a very brief inspection was sufficient to lead me to believe that I had encountered a disease, of which no distinct account had been given by writers on dermatology. I took notes of the case at the time, with reference to publication; but other occupations interfered with my intention, and the circumstance had all but escaped my recollection, when I met with the description of this disease, by Dr. Gull, under the term *vitiligooidea*, the identity of which with my own case could not fail to be recognised. The instances of this curious malady hitherto put on record do not amount to more than five. I have accordingly endeavoured to give a succinct account of what is known thereupon.

My patient, Mary B—, a married woman, aged twenty-nine, consulted me, in June, 1850, for obstinate and severe jaundice. Inquiry into her history elicited the facts that her health had been good until three years previously, when, after an attack of dyspepsia, jaundice supervened, and had continued till the time of her visit to me, uninfluenced by treatment, including several salivations. At this time she was universally and deeply jaundiced; but the appearance which immediately and more strongly attracted my attention was a peculiar deposit on the skin surrounding the eyes, and which, on further investigation, I found to be abundantly distributed over other portions of the body. She informed me that about twelve months ago spots of this peculiar deposit first appeared on the shoulders, and have since shown themselves on the face, arms, hands, and lumbar regions. In the face it has assumed a symmetrical disposition, extending along each eyelid, and down the side of the nostrils. On the shoulder the spots are circular, and very distinctly elevated. Along the inside of the elbows, and on the hands, the deposit follows the flexures of the joints, being flat and linear on the palmar aspect, and more tubercular and rounded on the dorsal. The colour of this deposit is of a whitish-yellow, resembling more nearly than anything else the atheromatous patches so commonly found in the aorta. On the face and palms of the hands it is but little elevated; and, as in atheroma, appears to be deposited immediately under the epithelium. On the shoulder and in the dorsal region the spots are circular and prominent, bearing no inconsiderable resemblance to split peas.

At the time of my seeing this case the peculiar affection was still on the increase, fresh spots showing themselves almost daily. They were tender to the touch, and were the seat of a burning sensation, which prevented the patient using her hands without acute suffering.

The history of the jaundice pointed to the conclusion that it depended upon permanent occlusion of the common duct. The woman died soon after my seeing her, under the care of another practitioner, and, as far as I could learn, from severe and rapid peritonitis.

The only references to this singular cutaneous disease which I have been able to meet with are contained in a paper published in 'Guy's Hospital Reports;' for although Willan alludes to a rare disease under the term *vitiligo*, which has some points of resemblance, the full comparison of the two is unfavorable to the notion of their identity. The term used by Willan has, however, led Dr. Gull to give to the disease in question the name *vitiligooidea*. The cases narrated by him are four in number. The first is that of a married woman, aged

forty-two, who had been deeply jaundiced for two years. At the end of fourteen months this peculiar change in the integument began to show itself on the eyelids, assuming a perfectly symmetrical form, as well as in the palms of the hands, where, as in my case, it followed accurately the flexures of the joints. The disease remained stationary till her death.

A second patient was admitted into Guy's Hospital, labouring under diabetes; but in this instance the eruption was so far different in its aspect that I cannot think Dr. Gull justified in associating it with the former case.

The third instance is that of a married woman, like the first, the subject of jaundice. The skin disease commenced at the end of fourteen months, appearing first on the hands, and subsequently affecting the eyelids. This case is now, I believe, under treatment, but the disease shows a tendency to increase rather than diminish.

The fourth case described by Dr. Gull is, in every respect, similar, both as to the prior existence of jaundice, and the distribution of the cutaneous deposit.

I have ventured to call attention to the above singular disease chiefly on account of its singularity, and not with the expectation of being able to offer any elucidation of its pathology or treatment. To speculate on the former might, until further experience is afforded, be an unprofitable exercise; nevertheless, it is impossible to overlook the important fact of some connection between the cutaneous deposit and jaundice of aggravated degree and prolonged duration. In every case reported, obstinate and severe jaundice had existed for several months prior to the appearance of the skin malady. Can it be that, like the cretaceous deposits of gout, this was an attempt at elimination of noxious matter necessarily contained in blood, in which was suspended the elements of bile? I regret much that I had no opportunity of instituting a microscopic examination of the deposit; but its *primâ facie* resemblance to atheroma would warrant the idea that, like the latter exudation, the peculiar deposit in question contained cholesterine, a principle which is well known to enter largely into the composition of the biliary secretion.

This explanation of the composition and pathological significance of the vitiligoid deposit is, as I have premised, simple hypothesis; but, such as it is, I would offer it, in order to elicit observations.

Respecting treatment, nothing can be said. If, as I imagine, the affection is but a symptom of prolonged retention of bile, or its elements in the blood, nothing in the way of amendment can be anticipated unless the original malady be removed, when possibly the absorbents might spontaneously remove the deposit. In the cases hitherto recorded no decided amendment followed any of the means adopted.

### Art. 60.—*On the Constitutional Treatment of Scald Head.* By Mr. Hunt.

(*Medical Times and Gazette*, Oct. 30, 1852.)

The object of this paper is to show the uncertainty and general in-

efficiency of local remedies, and the grounds on which constitutional treatment might be considered rational and hopeful. The affection in all its forms was believed by the author to be communicable by one and the same contagion, and to be either the consequence or the cause of a vegetable parasite, which, taking root in the hair bulbs, became a source of disease; and the object of the treatment was to destroy the parasite. Considering impaired health as one of the conditions favorable to the development of this complaint, the first indication is, to rectify, if possible, any deviation from health, or any deficiency of constitutional vigour which might complicate the local disease; and, if this could not be done, the author believed that the complaint might then, and then only, prove incurable. He related cases which had occurred in the Dispensary for Diseases of the Skin, in illustration of this difficulty, and others in which the disease had recovered under constitutional treatment, directed only to the impaired condition of the general health of the patient, and totally irrespective of the disease in the scalp. In these cases it was considered that the improved condition of the blood produced a change in the seat of disease, and rendered it no longer a fit nidus for the nourishment of the parasite, which perished, and the disease consequently ceased to exist. The remaining difficulty was, how to dispose of the disease in healthy subjects. In this case Mr. Hunt proposed to poison the parasite through the medium of the blood, just as we poison the acarus scabiei through the medium of the skin. For this purpose he believed that many poisons carefully administered in medicinal doses might avail. He particularly mentioned arsenic, as possessing a specific action on the hair-bulbs, as well as constituting a very manageable medicine, and a medicine which, as a remedy in scald head and ringworm, had never disappointed him. He related several cases in which the disease had more or less readily yielded to a course of arsenic, no external application having been used except tepid water, for the sake of cleanliness. Some of these consisted only of baldness, which the author believed to be caused by the parasitic fungus. Mr. Hunt concluded by observing, that if, as he had reason to believe, the same principles of treatment should prove to be applicable to the contagious forms of scalp disease, which he had found so practically useful in other chronic cutaneous affections, the difficulties of diagnosis would be reduced to a very simple and easy problem, so far as practice was concerned. For whatever be the character of the disease, provided it were neither syphilis nor scabies, the only thing necessary was to rectify the general health, and, if that measure failed to restore the healthy condition of the skin, to administer some powerful alterative tonic in suitable doses for a proper time. For this purpose the author preferred arsenic, as being a remedy more manageable, more certain, and more permanent in its effects than any other; and he had the satisfaction of knowing, that this opinion of its merits accorded with the experience of every practitioner largely engaged in the treatment of diseases of the skin.

ART 61.—*On the Use of Collodion in Smallpox and Erysipelas.* By Dr. CHRISTEN, Assistant Physician to the Prague General Hospital.

(*Vierteljahrschrift für die Prak. Heilk. Biv.*, 1852, and *Dublin Quarterly Journal of Medicine*, Feb. 1853.)

The editor of the 'Dublin Quarterly Journal of Medecine,' conjectures that the collodion failed in these cases in consequence of the injurious effects resulting from its uneven and unequal pressure upon the skin, and he thinks that a different result would have been produced if gutta-percha had been substituted for the collodion. How far, however, this conjecture is correct, we have as yet no means of testing, further than the cases recently reported by the late Dr. Graves, and copied into our last volume.

*Smallpox.*—The collodion was in most cases employed in the stage of papular development (stippchenbildung), the earliest period when, in general, the diagnosis of variola could be made with certainty. It was applied over a greater or less extent of the face and extremities, and in two cases the entire face was smeared with it. The results were as follows:—As the collodion dried and shrank, the redness of the papulæ diminished, the slight œdema of the skin disappeared, and the covered and adjoining parts became tense. With the progressive development of the pustules, and the accompanying increase of infiltration of the skin in their immediate neighbourhood, this tension became intolerable, especially in those cases in which the entire face was covered, and so annoyed the patients, that means had to be taken before the termination of the variola for the partial or complete removal of the collodion. The further development of the variola was neither prevented nor lessened, but only modified, by the papulæ under the layer of collodion forming even points of pus, which, as the suppurative process advanced, became confluent, and in severe cases formed a nearly uninterrupted layer. The evaporation of the liquid parts was so impeded that fluid pus was still found under the collodion, when the pustules on the other parts of the body had dried and crusted.

In those cases in which the collodion had to be partially or entirely removed on account of the intolerable tension, capillary extravasations took place soon after the pressure was removed, in the form of numerous ecchymoses under the epidermis, loosed from the corroded corium, which soon assumed a dark colour, and gave the patients a still more repulsive appearance. The suppuration had, as a natural consequence of the prolonged retention of the pus in the fluid state, spread more broadly and deeply; the scars, instead of being prevented as was intended, were more extensive and deeper, and were plainly perceptible even in those lighter cases, in which the surrounding parts, which had not been smeared with the collodion, presented scarcely a trace of a cicatrix.

The collodion also appeared, especially when extensively applied, to exercise an unfavorable influence on the general course of the disease. That it must, by suppressing the function of the skin, have an absolutely injurious effect when its application is general, and uninterruptedly kept up, is, according to physiological laws and our experience of the operation of analogous influences on the human organism, as clear as possible. But the arrest of evaporation, and the great extent of matter under the covering of collodion, appears to be of still greater importance, promoting as it does in a great degree the absorption of the pus, and favouring extremely that state of pyæmia which is so apt to occur when the eruption is extensive.

From the foregoing observations, thus briefly related, the employment of collodion in small-pox consequently appears to be not merely useless, but also directly injurious and inadmissible. In mild cases of variola, from which the favorable results that have been recorded appear to be derived, its use is superfluous, and in severe cases, with extensive eruption, from which our present conclusions have been chiefly drawn, it is absolutely prejudicial and objectionable.

*Erysipelas.*—In symptomatic erysipelas, depending on internal causes, its effects appear at first to be very surprising: the redness disappears; the swelling and pain become less, and a feeling of tension and numbness occurs in the parts which have been smeared with the collodion; nevertheless, the general phenomena, and the complications which may be present, continued unaltered, and in a short time, sometimes only a few minutes, the erysipelas commences to pursue its course unchecked, in the neighbouring or in distant parts of the body, even when the repeated application of the collodion follows closely on its track. The effect then is, like the remedy itself, merely local and transient. Collodion fulfils the indication as little as other means of demarcation which have been recommended, as for example cauterization with nitrate of silver or with acids, inunctions with mercurial ointment, &c. Facts, apparently of an opposite nature, in my opinion probably refer to cases in which the collodion was applied at a time when the process was about to terminate, or where, without its employment, the eyrsipelas would not have advanced further.

The employment of collodion appears to be more useful in erysipelas arising from local causes. In erysipelatous wounds, ulcers, slight burns, erysipelas from insolation, and similar cases, its use is decidedly advantageous. Although I have not had the opportunity of making many observations on this part of the subject, I will briefly communicate the results I have obtained. The immediate effect is the same as in symptomatic erysipelas: the redness, swelling, pain, and vesication rapidly disappear, and deposits of pus do not so readily form. In a case of gangrenous erysipelas of both eyelids, the repeated and tolerably extensive use of collodion on the surrounding parts, after the gangrene was arrested and the greater part of the gangrenous portion had separated, speedily removed the infiltration of the edges and a burrowing abscess, as slight as could well be expected in that situation. In a case of erysipelas with very considerable vesication on the backs of both hands and reaching to the wrist-joint—the consequence of severe insolation—the collodion was, for the sake of comparison, abundantly applied to one hand, while the other was merely treated with cold fomentations. On the application of the collodion the pain immediately ceased, and was replaced by a feeling of numbness and stiffness. The diffused vesicles and the very considerable œdema rapidly subsided, and the course of the disease was thereby much shortened; while the vesication on the other hand increased in size and extent, and when emptied filled again, the œdema subsided but very gradually, and the pain was very much aggravated by the exposure of the corium. On the fifth day after the patient's admission into the hospital, the hand which had been treated with collodion, and in the intervals with cold applications, had regained its normal volume. The pain, œdema, and blisters had disappeared, and nothing remained but a slight stiffness of the hand and a parchment-like dryness of the epidermis, while the other hand was, so late as the tenth day, considerably swollen and painful. In the instances I have mentioned, and in slight burns, the use of the collodion has proved of decided advantage, and it deserves to be recommended in similar cases.

## Art. 62.—*On the External Application of Iodine in Erysipelas.* By Mr. Hugh Norris.

(*Medical Times and Gazette*, Dec. 11, 1852.)

Mr. Norris has employed Iodine in this way during the last four years in nearly thirty cases of Idiopathic Erysipelas, and in so doing has arrived at the following conclusions :—

1. That the local application of the tincture of Iodine over the whole affected part appears to exercise a specific control over erysipelas.

2. That (as might *à priori* have been expected) the earlier the remedy is applied, the more rapidly are its good effects manifested.

3. That it should be repeated until convalescence sets in, as often as the surface becomes pale from the vaporization of the Iodine, notwithstanding the somewhat severe smarting which ofttimes immediately ensues.

4. That it never acts, as nitrate of silver sometimes does, in at once preventing the spread of the disease beyond the limits of its application, (by circumvention as it were,) but that, *locally*, it merely produces a rapid absorption of the exudation in the subjacent areolar tissue.

5. That it appears, *cæteris paribus*, to be equally beneficial in the sthenic and asthenic forms of the complaint.

6. That its effects apparently are *not merely local*, for in every severe case in which I have used it, it has exhibited a marked control over the constitutional symptoms, the constitutional amendment generally appearing to coincide with the local,—although, in several instances, while the external inflammation was spreading, (the force of the disease, so to speak, having been broken,) the internal improvement has sensibly manifested itself, the pulse becoming softer and less frequent, the tongue cleaner and moister, and the previous distress invariably more tolerable.

# PART II.—SURGERY.

## SECT. I.—GENERAL QUESTIONS IN SURGERY.

### (A.) CONCERNING INFLAMMATION.

#### ART. 63.—*A Practical Sketch of Low Inflammation.* By Mr. STATHAM, Assistant-Surgeon to University College Hospital.

(Taylor and Walton, Pamphlet, pp. 31.)

The object of this pamphlet is to call attention to the asthenic type of Inflammation—to that type the great characteristic of which is, not the effusion of serum and fibrin, but the rapid formation of unhealthy purulent fluids. Mr. Statham describes several forms of this inflammation,—as Low Erythema, Low Erysipelas, Low Cellulitis, Low Lymphatitis, Low Phlebitis, Low Peritonitis; but we have only space for the general facts. The whole pamphlet, however, will well repay perusal.

For practical purposes (writes Mr. Statham) may be sketched three states of the system met with daily, and either of which may be present at our first visit to the patient suffering from low inflammation.

In the first, the patient is feverish—the countenance flushed, expressive of stupidity or anxiety, in varying proportions; and these two expressions of the sympathy of the system are, to a more or less degree, but still one or other or both, invariably present. The pulse is quickened and soft. There has been a shivering-fit, but frequently to but a slight degree.

This is the stage of *excitement*, but the excitement of low fever as distinguished from that of inflammatory fever; the system is still combating the invading poison, and may, fortunately, continue in this state during the persistence of the local disease.

In the next form, and perhaps that the most commonly met with, the stage of excitement is less evident. The countenance is somewhat worn and dusky, or haggard and livid, expressive still more of anxiety; there is a queerness often in the behaviour, as if the patient had not recovered the effects of liquor; or one receives the idea that the patient had been long subject to malarious influences. The pulse is quicker and softer. Feverish excitement is often still marked.

This is the stage where the poison is dynamically *implicating* the constitution, still not yet established secondarily in the system by a fresh local affection; or again, it evidences the patient, who has already been in an unhealthy state, commencing to be affected by the local disease.

In the last, least frequent, yet common form, and especially where the blood has been the channel of communication physically to the system (as in pyæmia) of the morbid poison, the countenance is expressive of great anxiety; the features, at first flushed and sharp, soon shrunk and livid; the

patient is nervous and irritable; there is delirium at night. The pulse weak, rapid, compressible; the respiration short, quickened, imperfect. Here the system is *invaded*—affected secondarily by the setting up of fresh foci of the morbid poison.

In the later stages, prostration supervenes, and becomes more or less the most prominent feature of the case. Under good treatment, the patient may remain in the stage of "excitement" throughout, or not proceed further than described as "implication."

Let us now consider the pathological cause of these affections of the system, manifested locally by true inflammation,—yet not vigorous, "healthy" sthenic inflammation, neither a simply asthenic weakly-developed inflammation,—thoroughly distinguished from mere irritation, which gives none but nervous symptoms, or perhaps those due to determination of blood, unless, by the continuance of the irritating agent, inflammation of one or other kind ensues,—neither subacute, nor chronic, nor specific inflammation,—but an inflammation passing by its intermediate stages and arriving at the extreme one—viz., suppuration with great rapidity. The cause of this rapid development of the inflammation seems to be that here the usual struggle between the morbid action and the resisting vital forces is not indeed absent, but on the contrary always takes place; nor do the powers of the system yield without a struggle, but this struggle—either from the system being below par and the secretions not free, or from malaria, or unhealthy occupations, having excited a long-continued depressing influence upon it—or from its being in an unsound state, the result of long excesses—or of visceral—or of Bright's disease, &c.;—either from these causes, its forces being sapped, the system, at first resisting, soon yields, and then the fresh depressing cause, the results of low inflammation, being added to its former causes of depression, little further chance remains of later resistance to the local morbid action. *Or, again*, these local causes, whether they derive their strength from a virulent poison generated external to the body—as in some dissection wounds, and in the low forms of erysipelas—or from the great extent of the local injury, as when a limb is shattered, so that this severe injury alone would prevent a healthy local reaction (though generally the shock to the system has likewise much influence)—on these accounts the local causes are of such strength that the most healthy system succumbs to them without the possibility of sustaining that resistance which it exhibits in the usual sthenic inflammation.

* * * * * *

All vital processes require a medium state of activity of the functions, and in the same way inflammation, or the process terminating in suppuration and granulation, in its full development, must be considered as requiring a certain state of activity of the system, neither too high nor too low for its due elaboration; otherwise, even should its primary cause be removed, the inflammation cannot be checked, but the first changes in the part cause a continuance of that action, whether high or low, which had induced themselves; on the other hand, if the system is in a medium state of activity, on the development of its stages the inflammatory action ceases without having extended under either form. On this principle we employ antiphlogistics in many morbid states of the body. On the other hand there are used tonics and debilitants together, as in diseases of the eye; the common form of nitric acid with iodide of potassium is also an illustration.

It must be remembered, therefore, that whenever low inflammation occurs, the cause of its origin or continuance is a depressed state of the system, and that this must be corrected; hence tonic remedies are to be employed (correspondingly in sthenic inflammations we use antiphlogistics). 2dly, Any

check to the sceretion of effete matter is injurious to healthy action: this secretion must therefore be kept free. 3dly. The cause must be removed of the progressing morbid action, whether this be the original exciting cause, or be the morbid action already in course, or both. As regards both the general and local treatment the great object is to be prompt and effectual in the measures adopted.

Commencing, therefore, with a calomel purge and black draught, I have found it well, at once, in a case of low inflammation, to order tonics to be taken by the mouth, whether as medicine or food. Twenty minims of diluted nitric acid, or half the quantity, with a quarter of a grain or more of opium, or similar strengthening remedies of chlorate of potash, quinine, &c., every two, three, or four hours, are of signal advantage. Between these doses should be given nutritious food, as beef tea, wine, or eggs. Mercurial or simple purgatives must be repeated occasionally.

In the severer cases of "invasion" of the system, the doses of opium must be much larger, and form the principal medicine, with which perhaps tonics may be combined.

In the primary stage of excitement it may be proper to withhold tonics at the first, and merely to give medicines to improve the secretions. Further experience must decide whether tonics may be given during the period of excitement. I am inclined to think they may be, as by the necessary purgative first administered, and by the immediate employment of depletion locally, sufficient check is put upon the pathological *local* cause, and the next indication is to remove the pathological *general* cause by tonics, consisting, as it does, of a system below par, or one succumbing under the action of poison, from want of strength. In any case tonics must be withheld until the bowels, whether relaxed or costive, have been freed. Where the system is still further affected, the urgency of the treatment is far more evident, and its success often most rapid.

In *Erysipelatous inflammations* a similar tonic treatment and warm applications seems to be the most beneficial, at least in town practice.

To fulfil the third indication, any foreign bodies or causes of irritation must be removed from the part, pus discharged, and the inflammatory process subdued. This is effected locally, in *Low Erythema*, by warm fomentations or poultices; in *Low Erysipelas*, scarifications are the quickest and surest method, or occasionally incisions to cause depletion made by a lancet-stab, when the disease is of small extent. In *Low Cellulitis* leeches in large numbers in the primary stage, before the skin is altered much in colour (as especially in those threatening cases after severe injuries); later incisions are demanded; perhaps scarification is the best, in cases of affection of the skin and cellular tissue together; in *Low Lymphatitis*, leeches in the secondary form, in the primary form free scarification and leeches to the glands; possibly blisters may prove useful later: in *Low Phlebitis* leeches when possible: in *Low Peritonitis* leeches seem to be of possible value; if used they should be so by dozens; other low inflammations require similar treatment; in all, warm fomentations are of absolute importance. The reddened integument caused by poultices, and around leech bites, or due to both these causes, must not be confounded with the signs of any other low inflammation present or suspected, as cellulitis, erysipelas, &c. In all cases gravitation should be guarded against by position, although the limb may be still raised, with great benefit, higher than the body.

The Local Depletion frequently requires repetition.

The *application of cold* to an operated part of the body, or its neighbourhood, has been charged with setting up inflammation. In severe injuries,

however, and after operations, the proper employment of cooling applications is very frequently the preventive of low or other inflammation; if only partially applied, as to the outer surface of the abdomen, it is not unlikely that they may prove injurious. If union were to occur by the first intention, most of our cases of low inflammation would never arise, and for the promotion of this union, cold or irrigation, which answers the same end, seems to be the most effectual agent.

When the *extension* of low inflammations is checked, blisters and such other means are useful for the removal of the morbid products. Warm lead lotion is now often very useful.

### (B.) CONCERNING TUMOURS.

ART. 64.—*Successful Treatment of a large Encysted Tumour, by Puncture of the Sac and Cauterisation of the Interior.* By Dr. R. L. M'DONNELL.

(*Canada Medical Journal*, Nov. 1852.)

Dr. M'Donnell has for sometime stated that encysted tumours on exposed parts of the body, may be cured *without any unsightly scar*, by evacuating the contents through a punctured opening, cauterising the interior with a probe tipped with nitrate of silver, and then bringing the sides of the tumour into contact by proper pressure; and he has frequently and successfully practised this mode of treatment. The following case is an instance:—

A strong healthy young woman noticed a small tumour growing upon the back of her neck, but which caused her no pain. At first it could only be detected by feeling, but it soon became perceptible to the sight, and in the course of two years had attained the size of a turkey's egg: it was elastic, moveable, not discolored, and handling it, gave rise to no pain. From the fact of its being so prominent and in such an exposed situation, she was obliged to keep a handkerchief applied so as to cover all the back of the neck. Feeling much alarm at the size the tumour was daily acquiring, she applied to three practitioners, all of whom advised its removal. One in particular was very urgent in his solicitations to be allowed to perform the operation, and took some pains to explain to both herself and her friends, the folly of attempting to remove it by an *elliptical* incision, as recommended by one of the others, assuring her that nothing but the crucial incision and masterly dissection would effect that object.

Under these circumstances she consulted me, and having ascertained the nature of the disease, I proposed curing it, without leaving a crucial cicatrix or indeed any mark that could be detected. To this proposal she gladly assented, and accordingly, on the 14th May, 1849, assisted by Dr. Brookes, of Sherbrooke, and Dr. M'Callum, of this city, who were then my clinical clerks, I proceeded as follows: A hydrocele trocar was pushed into the tumour, and its contents emptied into a middle size cupping-glass, which they filled. On examination they were found to be composed of a turbid fluid, devoid of odour, with a quantity of thick cheesy, steatomatous matter floating through it. The sac being emptied, two or three probes, whose ends were coated with nitrate of silver, were, in succession, introduced and freely applied to all parts of the cyst. A plug of lint was introduced into the opening, and water-dressing applied. The next day, on the lint being removed, a quantity of sero-purulent matter, equal to one half of what the cyst contained the day before, was evacuated. The caustic was again applied and the wound simi-

larly dressed. On two more occasions the same plan was adopted, and at each dressing the size of the cyst was perceptibly diminished. Pressure, by means of a compress and adhesive plaster were now applied, and complete obliteration of the cyst was effected at the end of a fortnight. It is now three years since the tumour was thus treated, and she has had no return of the disease, and I need not say, is much better pleased to be devoid of the vestiges of such skilful surgery as that so disinterestedly recommended for her relief.

ART. 65.—*Statistics of Operations for Cancer.* By Professor PAGET.

(*Lancet*, June 19, 1852.)

In a recent note to the 'Lancet,' Mr. Paget qualifies a remark which he had made in his lectures at the College of Surgeons, "that persons operated upon for cancer die upon an average thirteen months sooner than those upon whom no operation is performed," by stating that he referred only to scirrhous cancer of the breast. He says:—

In such cases, I believe that the general average duration of life, after the patient's first observation of the disease, is forty-nine months; that the average life of those whose breasts are removed, and who survive the effects of the operation, is forty-three months, and that the average life of those in whom the disease is allowed to run its course is about fifty-five months.

In the second lecture, I said that the general result of operations for medullary cancers is very different; and that, although they are so seldom long survived, that they are generally considered to be less beneficial than the operations for scirrhous cancers of the breast, yet, on the whole, they are more so. The general average of life of persons affected with medullary cancer of the eye, testicle, breast, bones, or other external organ, may be reckoned at about twenty-four months from their first notice of the disease; but I believe the average for those from whom the primary disease is removed, and who do not die in consequence of the operation, is about thirty-four months; while the average for those in whom the disease is allowed to run its course is scarcely more than a year.

In the third lecture, I expressed the belief that, on the whole, the operation for epithelial cancers is even more effective in prolonging life than the operation for medullary cancers; but that the wide diversities in the duration of life amongst those affected with this form of cancer, make it very difficult, at present, to deduce such an average as may be relied on. And I would repeat what I said in one lecture respecting all these averages—namely, that such general results deserve only general consideration in the treatment of particular cases of cancer. They may justly determine a general rule of action, but it can be only such a rule as must admit of numerous exceptions. In many cases of scirrhous cancer there are sufficient reasons for operating; and, in many cases of medullary and epithelial cancers, reasons as sufficient for refraining. The right course must, in each ease, be determined by a just appreciation of all the conditions each presents.

### (C.) CONCERNING ULCERS.

ART. 66.—*The Treatment of Ulcers by the Exclusion of the Atmospheric Air.* By Mr. HOLT, Senior Surgeon to the Westminster Hospital.

(*Lancet*, July, 1852.)

The two following cases, showing the benefit resulting from the

judicious employment of collodion in some kinds of ulcers, were inadvertently omitted in our last volume :—

Case 1.—Henry H—, aged 38, was admitted, under the care of Mr. Holt, January 13, 1852. The patient is a carpenter, and states that five years before his admission an ulcer formed by the side of his left tibia after a very severe attack of rheumatism. He tried to heal it by various means, but did not succeed, and about one year before his reception into this institution he went to the Middlesex Hospital, with an ulcer of the size of the hand, and one eighth of an inch deep. By lotions of sulphate of copper, rest, and a roller, the sore was reduced to the size of a sixpenny-piece. He was discharged, and went to work, and in the space of three or four days the ulcer had again reached its original size. He treated himself for a little while, but soon applied at this hospital, where the sore was first poulticed for three or four days. When the inflammation had been subdued the ulcer was dressed in the following way :—From a piece of adhesive plaster, somewhat larger than the sore, a portion, just the size of the latter, is cut out; the plaster is then applied to the part, and painted with collodion. Oiled silk is now placed over the ulcer, and made to adhere to the plaster by means of the collodion, by which process the air is completely excluded from the ulcerated surface. The whole is then secured by strips of adhesive plaster placed crosswise, and by a roller running from the toes to above the knee.

This dressing used to be left undisturbed for a week or ten days, and by being taken off with care did not give the least pain. The patient remained in the meanwhile mostly in bed, and had good diet. On the 23d of March, about nine weeks after admission, the sore was completely healed, but by walking up and down stairs it re-opened to the size of a fourpenny-piece. The same kind of dressing was continued, and in a fortnight the patient was discharged, the ulcer being quite cicatrized.

Case 2.—Richard C—, a labourer, aged 40, was admitted March 12, 1852, under the care of Mr. Holt. The patient had been run over the loins by a cart, and had escaped without much injury. Whilst under treatment he complained of an old ulcer on his right leg, about the size of the palm of the hand. Poultices were applied for a few days to subdue inflammation, and the same kind of dressing as described above was employed. This patient, however, was allowed to leave his bed, and walk about the ward. In the space of three weeks the sore was healed, and the man has been discharged.

## Art. 67.—*Chloroform in Phagedænic Ulcers.* By Mr. Hancock.

(*Lancet*, Feb. 12, 1853.)

Since chloroform began to be used as an anæsthetic agent, the minds of many practitioners have been bent upon extending the therapeutical applications of this agent. It has been inhaled in epilepsy, tetanus, and other convulsive diseases; it has been taken into the stomach in cases of cholera; and has been applied, by M. Aran, of Paris, to joints affected with acute rheumatism, and to the abdomen of patients suffering from lead colic. M. Aran has found chloroform extremely useful in the two last-named disorders, and we have no doubt but this compound will be more and more tried in all cases where a powerful local sedative is required.

One can easily understand how chloroform, applied upon a painful

joint, or on the abdomen in colic, should give relief; but, on general principles, it is less easy to see how ulcerations should be benefited by it, except it were by a stimulating action. This stimulating power of chloroform, or capability of changing the character of an ulcerated surface, was lately put to the test by Mr. Hancock, in a case of a phagedænic chancre situated in the vestibule of a woman about thirty years of age.

The patient was admitted under the care of Mr. Hancock, Jan. 14, 1853, and, as there was much debility and exhaustion, besides the syphilitic ulceration, Mr. Hancock prescribed bark and nitric acid, with soothing applications to the ulcerated parts. When, however, the chancre began to assume a phagedænic character, the promptest means were employed to arrest the destructive ulceration. Among these, Mr. Hancock used chloroform, as he had found, from previous experience, that, even diluted with water, it had a decidedly beneficial influence on phagedænic ulcers. The chloroform was here used in an undiluted form, and a few applications were sufficient to stay the phagedænic tendency of the ulcer. The pain was rather severe, but not so much so as when pure nitric acid is employed; and it was found that chloroform, though less destructive, had just as much, if not more power in arresting phagedænic action than nitric acid. The chancre has now assumed a healthier character, and is rapidly progressing towards cicatrization.

Mr. Hancock, in commenting upon this case, took occasion to remark, that he had lately treated cases of phagedænic ulceration which had resisted applications both of opium and nitric acid; recourse was then had to chloroform, and with the happiest result.

### (D.) CONCERNING THE BLOOD-VESSELS.

ART. 68.—*Result of the Ligature of the Large Arteries in* 82 *Cases occurring in his own practice.* By M. ROUX.

(*Prov. Med. and Surg. Journal*, Oct. 27, 1852.)

The following 82 operations comprise the whole number of ligatures of arteries performed by M. Roux, since 1808, and were communicated by him to the Société de Chirurgie. An abstract of the paper has been published in *L'Union Médicale* :—

| *Arteries.* | | *Operations.* |
|---|---|---|
| Popliteal artery | 1 | 1 Spontaneous Aneurism (ancient operation). |
| Femoral artery | 46 | 3 Recent wounds. |
| | | 2 For hæmorrhage after gunshot wounds. |
| | | 2 Wounds of artery in operation. |
| | | 7 Hæmorrhage after amputation. |
| | | 1 Femoral aneurism (Hunter's operation). |
| | | 2 Femoral aneurism (ancient operation). |
| | | 2 Fungous tumour of tibia. |
| | | 27 Popliteal aneurism (Hunter's operation). |

| | | |
|---|---|---|
| Brachial artery | 20 | 10 False aneurism of the bend of the arm.<br>6 Arterio-venous aneurism.<br>2 Hæmorrhage after amputation.<br>1 Spontaneous aneurism of the ulnar artery.<br>1 Fungous tumour of the radius. |
| Carotid (common) | 6 | 1 Fungous tumour of the orbit.<br>2 Wound of the face.<br>3 As a precautionary measure before operations. |
| Axillary (immediately below clavicle) | 4 | 1 Spontaneous aneurism.<br>1 Recent wound with false aneurism.<br>2 Hæmorrhage after amputation at the shoulder-joint. |
| Subclavian | 3 | Secondary hæmorrhage. |
| External Iliac | 2 | Secondary hæmorrhage after ligature of the femoral artery. |
| Total | 82 | |

In these operations the distal mode of Brasdor has not been tried. The old method 16 times; and that of Hunter, with Scarpa's ligature, 66 times. The number of cases of true aneurism was 33, of which two only were women. The results were, 10 unsuccessful and 23 cures. The number of false aneurisms was 10, all of which were successfully treated.

Of the six cases of arterio-venous aneurism, for which the humeral artery was tied in each case, four were successful, and in two amputation was necessitated by gangrene or secondary hæmorrhage.

These statistical facts will be read with interest by the English surgeon, by whom the thick ligature used by Scarpa is now carefully eschewed, but the small number of cases (4) in which secondary hæmorrhage occurred, will certainly bear out Mr. Roux in his attachment to this mode of operation. The difference between the English and French modes of conducting the ligature of arteries is so great, both in the operation itself and in the dressing of the wound, that we rejoice to find that the above facts will form part of a complete work on surgery, which M. Roux is now preparing, and of which the memoir presented to the Société de Chirurgie is only an instalment.

ART. 69.—*Cases of Aneurism treated by Compression.* By (1) Mr. BENJAMIN PHILLIPS, F.R.S.; (2), Mr. MONRO (of the Coldstream Guards); (3), Mr. COCK; (4), Mr. REEVES (of Carlisle); and (5), Mr. COATES (of Wrington, Somerset.)

(*Lancet*, Jan. 8, 22, 29, and Feb. 12, 1853; and *Medical Times and Gazette*, Nov. 6, 1852.)

The first three cases were brought before the Medico-Chirurgical Society. Those of Mr. Phillips specially with a view of obtaining the opinion of English surgeons upon the treatment of aneurism by compression, and upon the best means of carrying out the operation. Mr. Phillips thought the evidence was decidedly in favour of the treatment by pressure. The operation had failed in many instances in consequence of its real principle being misunderstood. It was not necessary to obstruct altogether the stream of blood and produce inflammation in the vessel and consequent obliteration of its cavity: such pressure could scarcely be borne. All that was necessary was to adjust the pressure so as to oppose but a *slight* impediment to the circulation, and to do this for a sufficient time, pausing whenever any

particular symptoms of distress made their appearance. Unfortunately no proper discussion was elicited; and the only result of any moment was, that Mr. Hodgson and Mr. Ferguson expressed themselves in favour of the operation, and of the sufficiency of slight pressure to the end in view.

*Mr. Phillips's cases.*—1. Catherine C—, aged 39, a market-woman, tall and gaunt, was admitted into Westminster Hospital on December 3, 1851, with a pulsating tumour in the right popliteal space. She had observed a stiffness about the right knee about two months before admission. She followed her occupation, and carried heavy loads on her head; but gradually the part became more painful, especially after her day's work. Three weeks before her admission, in getting into a cart the limb was stretched, and she felt something give way in the ham. The pain suddenly increased, and in two days extended to the ankle. Her habits of life were unfavorable; she was a confirmed gin-drinker, and she laboured under great nervous excitement and apprehension. The heart's action was most tumultuous, but no signs of disease could be detected along the course of the large internal vessels. There was a pulsating tumour in each popliteal space. That on the right side commenced in Hunter's canal, a little above the point where the artery enters into the popliteal space, and extended beyond the middle of that space. It could not be emptied by any amount of pressure. The tumour on the left side was situated lower down in the popliteal space; was smaller, and with less violent pulsation. The treatment was at first directed to her general condition: it consisted of a moderate diet, with abstinence from fluids; ice and ice-cold water were applied to the tumour. Under this plan she improved; and, at the end of a fortnight, it was determined to try the effects of moderate pressure on the side of the larger tumour. From her alarm at the sight of an instrument invented by the author, it was thought prudent to commence proceedings by means of a simple ring tourniquet, the pad being fixed near the apex of Scarpa's triangle. It was screwed tight enough to cause the pulsations to become imperceptible to the touch. At the end of two hours the pain was so great that it became necessary to remove the pressure; and in place of the tourniquet, a Signorini's compressor was applied at the groin. It slipped, however, after nearly three hours, but was reapplied for the night; but in the morning it was found to have slipped again. During the day and night moderate pressure was kept up by means of the ring tourniquet, the situation of which was altered from time to time, and this was continued during the succeeding day. The pulsation of the tumour had evidently lessened, the knee looked shining, and the leg was slightly œdematous. During the night the author's compressor was used. Pressure was continued during the following day and night, the ring tourniquet was used, and with slight intervals the pressure was continued for seven days longer, when the tumour was carefully examined; it felt more solid, and no whiz could be detected when all pressure was removed. The pressure was more or less steadily applied for twelve days more. At this time there was more fulness about the knee and ham; no whiz could be heard, but there was a general elevation of the mass, synchronous with the heart. After two days' interval pressure was again applied, and continued at intervals for eleven days. It was believed, however, that the treatment had failed, and that the aneurism had become diffused; and, as a last chance, ligature was applied. She died on the seventeenth day after the operation; and, on examination, a clot was found extending from the ligature to the aneurism. The posterior ligament of the knee-joint was ulcerated, and the cavity of the joint contained sanguineo-purulent fluid. The aneurism in

the left side appeared to consist of a fusiform dilatation of the artery, and contained concentric laminæ of coagulated blood. There was a large aortic aneurism commencing below the origin of the cœliac axis. The aorta and many other arteries presented extensive fatty degeneration.

2. George S—, aged 31, a navigator, admitted July 8th, with a popliteal aneurism of the size of a turkey's egg. It had begun six months before from a strain. Six weeks after this he observed a "knot" in the bend of the knee, which gradually increased to its present size. His health is good, and the circulating system tranquil. The characters of aneurism were very marked; and, when firm pressure was applied on the artery at the groin, the tumour disappeared. It was found that he had been treated by compression at the Reading Hospital; and the author was furnished with particulars of the case by Mr. Bulley, from which it appeared that pressure was applied for three weeks, by which the tumour became less, and lost its elastic feel. It was noticed that at night, when the pressure was entirely removed, the pulsation ceased; but that when it was reapplied the pulsation returned. Obstructive pressure was now applied for some time, but the man became impatient, and refused to allow any treatment. He was consequently discharged.

Although it appeared that a fair trial had been made, yet the author was induced to repeat the compression, and Dr. Carte saw the case, and aided the author with his instrument. The author here proceeds to describe the instrument. It was applied the 14th of July, and no pulsation could be detected in the tumour, which was completely emptied. The kind of pressure was varied as well as the situation. In three days it was noticed that the tumour could no longer be emptied, and that it contained coagula. The pressure was now continued, and, on the ninth day, the tumour was quite firm, and there was no pulsation in it. Since that time he has remained quite well.

After commenting on the different effects noticed at the Reading Hospital, and under his own treatment, the author adverts to the fact, that authorities are still found in opposition to the treatment of aneurism by compression. It must, however, be judged of by its results; and, if it be shown that more cases are cured by it than by ligature, it will ultimately be preferred. Mr. Syme's statement, that he has tied the femoral twenty times without bad results, does not agree with the experience of this operation in the hands of others; and it appears, by reference to cases, that the failures amount to between one third and one fourth of the whole. The treatment by compression is far more favorable, its failures not exceeding one fifth of the whole; and even when it fails, the patient's life may be saved. The question, whether there are any objections to this mode of treatment so serious as to make the surgeon hesitate to employ it, is answered by the author in the negative; and he objects to Mr. Syme's description of the time employed and the pain to be endured under it, as not a fair statement of the case. He admits that cases have occurred where great suffering has attended the treatment by compression, but conceives that this is unnecessary, and is not the common result. It originated in a mistaken notion that it was necessary to stop the current of blood entirely in order to effect a cure. Mr. Todd did not think excessive pressure necessary; but those who followed him for some time acted on the opinion that what the ligature does must be done by compression. But it has been proved that an aneurism may be cured, although the whole supply of blood be not completely cut off, even when the ligature has been used. The author maintains, then, that the surgeon is justified in adjusting the pressure to the enduring powers of the patient, rather than to the almost complete extinction of pulsation in the sac, provided the pressure be sufficient to produce a decided diminution in the force of the pulsation. As to the most

eligible point for applying the pressure, he thinks it should be where it can be best borne, and where it occasions the smallest amount of inconvenience; and he does not think it of consequence that the pressure should be applied above the profunda. It is important, however, that the return of blood by the veins should be as little as possible interfered with; and for this reason he believes that the immediate neighbourhood of Poupart's ligament is the most desirable situation, while at the same time a smaller amount of pressure is necessary at that point. The author maintains that the pressure should be applied gradually, and not suddenly, so as to admit of the enlargement of the collateral vessels; and he thinks it is clearly established that continuous pressure is not absolutely necessary. The author sums up by saying that he is justified in asserting that pressure should be applied at points where it can be best borne, provided it be not too far removed from the sac; that, if possible, it should be so applied as not to prevent the return of venous blood; that it should be strong enough to produce a sensible influence on the strength of the pulsation in the tumour; and that it may be intermitted to a sufficient extent to make the treatment tolerable to the patient.

3. *Dr. Monro's Case.*—Drummer W. K—, aged 23, of a spare and delicate habit of body, walked to the hospital on the 19th of April, 1852. He complained of severe pain in the calf of the left leg, which was swollen, and the veins were dilated. Five days before, while playing at cricket, he was suddenly seized with pain, which obliged him to desist. He imagined he had met with a sprain. Although still suffering, he continued his duty; but to-day, being unable to go on any longer, he had come to the hospital. A large tumour, pulsating synchronously with the heart, was found to occupy the popliteal space. It was partially emptied by pressure, and returned to its former dimensions when that was removed. It expanded in every direction, and the bellows sound was heard. No other disease of the femoral or other artery was detected. The chest was free from disease, and the heart's action regular. He had suffered from time to time from slight catarrh and febrile attacks. He had been treated five times for venereal sores, but on one occasion only had taken mercury, and then but for ten or twelve days. After a little preparatory treatment, Mr. Phillips's instrument was applied, at first over the brim of the pelvis. The pressure could be borne only an hour and a half; it caused severe pain and feverishness. Believing that this arose in great measure from nervousness, the author employed manual pressure a little below the origin of the profunda. This was effected by the aid of several intelligent convalescents. The artery was compressed only to such a degree as to allow a feeble pulsation in the sac. For the first three days this plan was followed for eight hours only during the day. The patient did not complain at all. There was no feverishness, nor increased œdema of the leg. The clamp tourniquet was now employed, but was removed each night; finding that it was well borne, it was kept on at night also from the 26th. On the 3d of May the sac had become harder and smaller, the arteries more developed, and the œdema of the calf less. On the 6th the sac ceased to pulsate, and the tourniquet was removed. From this date the absorption of the contents of the sac went on rapidly, and he began to regain the use of his limb. In a short time the measurement round the limb diminished from sixteen inches and a quarter to fourteen inches and one third; the femoral artery was pervious. On the 2d July he was dismissed to his duty, which he continued to do well till the beginning of November. Before that time his general health seemed worse. On the 19th November he was again admitted, and an aneurism of the aorta was found near the cœliac axis. He complained of great pain in the loins and abdomen, coldness and numbness of the legs,

faintness and nausea. On the 9th December he seemed to be fast sinking, and died on the following day.

On post-mortem examination, the heart was found of usual size—somewhat flabby on the right side, but the texture sound; valves healthy; no disease of lining membrane; the aorta sound to the situation of the cœliac axis, between which and the superior mesenteric a rupture of its coats was found, and openings communicating with a large sac, of recent formation and filled with coagula. It had burst in two places, and several pounds of blood were found in the cavity of the abdomen. The aneurismal limb was injected; the femoral and popliteal arteries were of natural size and pervious, until opposite the centre of the popliteal space; femoral vein pervious and healthy; the profunda and its branches enlarged; slight thickening all that remained of the sac; popliteal artery obliterated down to its division into the tibial arteries; popliteal vein also obliterated; the anterior tibial artery enlarged; the posterior of usual size; the peronæal larger than usual; muscular branches large; the ramus anastomoticus magnus three times its usual size, its branches anastomosing with the inferior articular recurrent tibial, and with each other. Two superior articular and an azygos, given off by a common trunk, just previous to the remains of the sac, anastomosed freely with the recurrent tibial and peronæal.

The recurrent tibial was as large as the radial, and anastomosed freely with the articulars and plexus in the peronæal nerve; a tortuous plexus in the substance of the politeal and peronæal nerves, united below with a recurrent branch from the anterior and posterior tibial behind the head of the fibula; another branch from the azygos communicated with the recurrent branches behind the head of the fibula.

The communication between the external and internal articular was effected by branches three times their natural size; that between the anastomotica magna and inferior articular, between the recurrent tibial and superior articular, by large branches.

4. *Mr. Cock's Case.* — William G —, aged 57, and a carpenter by trade, was admitted, Nov. 15, 1852, into Luke ward, under the care of Mr. Cock. The patient has exerted himself as much as is usual in his calling, but never imposed more fatigue on the right leg than the left. He is of high stature, robust, has always enjoyed good health, and been particularly temperate in his habits. He is of a quiet, contented disposition, and possesses an average amount of intelligence. The man is married, has many children, and does not remember having injured either leg in the slightest degree; nor did the affection ever exist in the family. Three months before admission, the patient's right thigh and leg pained him much for a few days, and he was under the impression that the pain was seated in the bone. This attack did not last long, and the patient soon thought no more of it, until one month afterwards, when he noticed a little lump in the popliteal space, of the size of a plum. Pulsations were then distinct, but much fainter than they subsequently became. No actual pain was experienced, but the tumour for the next two months became gradually larger, though the patient was never prevented from walking as usual, going even great distances without inconvenience.

On admission, the patient's state was the following:—There is a strongly pulsating tumour, partly in the right popliteal space, and partly lower down towards the gastrocnemius muscle. The swelling begins above, in the popliteal space, opposite to the upper border of the patella, and ends below, on a level with the tubercle of the tibia. The tumour is round, and about the size of a turkey's egg; it pulsates strongly, and presents, on auscultation, a strong

bruit. The chest, on careful exploration, does not yield any evidence of thoracic aneurism. The tumour feels yielding and elastic, and the hand placed upon it receives a sensation as if the vessel were dilated more towards the inner than the outer side.

The compression was begun Nov. 24th, and regularly continued to December 10th, making just sixteen days. The pulsations ceased five days before the apparatus was completely left off; but it was thought advisable to continue the pressure, so as to ensure the due establishment of the collateral circulation. The tumour was on the day of the patient's discharge (Dec. 22, 1852, thirty-seven days after admission) just half its original bulk, and presenting a great degree of hardness. The pressure was kept up with great regularity and patience during the whole of the above-mentioned period; the weight at the groin being substituted for the clamp when the latter was getting too irksome. The patient slept very little for a whole week, as he was anxious to keep up the pressure in the most exact manner; and he was fully rewarded for his close adherence to Mr. Cock's directions, by the speedy solidification of the sac and obliteration of the artery.

When the apparatus had been completely removed, the leg was tightly and evenly secured by a roller; and when the patient first attempted to walk he felt the leg rather weak, but all pain in the limb had quite disappeared. He finally left the hospital Dec. 22, 1852, with the tumour quite solid, and the complete obliteration of the artery.

5. *Mr. Reeves's Case.*—The patient had suffered from popliteal aneurism for twelve months, and at the time of the operation he was confined to bed from debility, his circulation being low, his pulse like a thread, and the pulsation in the tumour very weak. Compression was first employed on the 6th April, 1852, and continued for four hours, and on the next day the tumour had become firm and pulsation was at an end—for, from this time the patient continued to improve progressively until he was quite well.

6. *Mr. Coates's Case.*—This was a case of false aneurism in the bend of the elbow, resulting from bleeding, and the instrument used was the *presse-artère* of Weiss. During the first four weeks the tumour showed little disposition to diminish, but afterwards (the precise time is not specified) the cure advanced rapidly until it was perfected. The presse-artère caused a good deal of pain and œdema.

7. The patient in this case, who on the former occasion had been under Mr. Poland, was readmitted into Guy's Hospital eleven months after his discharge, with symptoms indicating that the popliteal trunk and old sac had suddenly given way at the old seat of injury. At this time he was under the care of Mr. Hilton. He was desired to use the same weight and clamp, and entrusted with the sole management of the treatment, as he was fully acquainted with the mechanism, from his former stay in the hospital. The clamp controlled the circulation in the vessel with slight pressure, and could be borne for several hours at a time without any intermission. On the loosening of the clamp, the weight was used in the groin. The patient could now sleep with the instrument fixed during the whole night, without any blood being allowed to flow through the artery.

The pulsations in the sac stopped on the third day, but the treatment was pursued for three weeks, at the expiration of which perfect consolidation of the sac and obliteration of the artery were obtained.

He left the hospital, December 7, 1852, in perfect health, twenty-seven days after his second admission. The tumour was hard and solid, did not pulsate in the least, and was beginning to contract.

## Art. 70.—*On the Treatment of Aneurism by Galvano-Puncture.* By M. Boinet.

(*Mém. de la Société de Chirurgie*, tome iii, 1852, p. 120, 1852; and *Medico-Chir. Rev.*, Oct. 1852.)

M. Boinet's conclusions as to the results which have hitherto followed this mode of treatment in aneurism agree with the impressions already existing in the minds of the Paris and London surgeons. They are in the main very unfavorable to the operation. After reviewing the published accounts of *thirty-two* cases, he proceeds :—

We have found 21 of these to have been unsuccessful; 10 successful; and as the result of the other is not indicated, it was probably not successful. Of these 32 aneurisms, 14 were due to traumatic causes, and the others were developed without appreciable cause. Of these aneurisms, 9 affected the brachial artery; 8 of these arising from venesection, and the other from contusion. If we examine the results that have been obtained by the new method, we find that in 5 out of the 9 brachial aneurisms it is said to have been successful. But is such success real? The patients have left the hands of the surgeon too soon, and before he could decide, after a sufficiently long lapse of time, whether the cure would be maintained, and no relapse take place. We may also add, that in almost all these cases, success has been obtained as a consequence of inflammation and suppuration of the sac and the artery—an inflammation developed under the influence of galvano-puncture; and that in all of them ice and compression have been employed, for more or less time, concurrently with the galvanism. . . .

In the presence of these facts, can we or ought we to partake of the enthusiasm of some of our colleagues? Whoever will examine into them without prejudice, must perceive that the successes reported are cures which may be considered as real at the periods when the patients left the hospital, but which require to be re-examined several years after, in order to determine how far they are permanent. The doubt which seems to prevail in the minds of all surgeons upon this subject has arisen from these cases having been too prematurely published. On analysing the cases and the observations of these authors, we have remarked that they have recorded what they wished to obtain, rather than what they have obtained; and that they write without having any proof, and under the guidance of mere inference. This is especially the case when they have to refer to any accident, which could never happen if such or such a condition were fulfilled—a condition which at a later period becomes realized, without leading to the promised and hoped-for results. The rules which should serve as guides are as yet not distinctly traced; and the surgeons who have tried this method are not at all agreed in their mode of applying it. . . .

The most constant result that has been obtained, both by observations on man and experiments on animals, is the coagulation of blood in the aneurismal sac, and in the arteries submitted to galvano-puncture. This advantage would be invaluable if proved by numerous facts, and, above all, if we could procure it without inducing the numerous accidents we have enumerated. If this were so, it would remain to be inquired, whether for the radical and permanent cure of an aneurism, the blood must become coagulated at the same time in the sac and in the artery. It is at present a received principle, that the primary condition for obtaining a radical cure of an aneurism is an obliteration of the artery, to a certain extent, above and below the opening in

its coats. But in the treatment by galvano-puncture, the result chiefly sought for is the restoration of the permeability of the artery. But is not this permeability a danger for the future? and does it not compromise rather than favour the success of the new operation? Is it not to be feared that the re-establishment of the circulation in an aneurismal artery, which has an ill-cicatrized wound, or still is in communication with a sac quite or partly filled with coagula, may not prove a remote or predisposing cause of the return or the maintenance of an aneurism, when on the road to recovery, or even cured? Such a result is much more to be feared than desired. If the obliteration of the artery above and below the sac is necessary and indispensable for the cure of an aneurism, and always takes place after ligature or compression, or a spontaneous cure; if we may always, without any danger, determine coagulation in an artery, whatever be the calibre of the vessel, or the age and condition of the subject,—would it not be more rational to pass the needles into the artery itself, above and below the sac, rather than into the sac, which would then become obliterated, as after ligature or compression? Another fact, too important to be lost sight of, is, that in experiments upon animals, needles plunged into the arteries always promptly induce coagulation of the blood, without the production of inflammation or gangrene of the walls of the vessel. In aneurisms, however, the coagulation of the blood in the sac is often obtainable only with difficulty, and is perhaps only due to the inflammation excited by the electricity,—so that we may even inquire if such coagulation is not rather the result of inflammation than of galvano-puncture, properly speaking; and whether the cures which have been obtained would have been procured without the secondary or indirect coagulation.

It results from these facts, and the conclusions that may be deduced from them, that the important question of the treatment of aneurisms by galvano-puncture is as yet far from being cleared up, and can only be resolved by clinical experience, conducted within the limits of prudence. In the meantime, surgeons will consider this method as less certain than the employment of the ligature, and cannot propose it as deserving of equal confidence. It is only in certain desperate cases—in those in which the ligature, on account of the seat of the aneurism, is not practicable—that galvano-puncture may sometimes offer certain advantages. We can predict nothing as to the future of this procedure, since the published facts are neither numerous nor precise enough to enable us to form a complete estimate respecting it.

## (E.) CONCERNING FRACTURES AND DISLOCATIONS.

### ART. 71.—*On a New Method of Treating Fractures.* By Mr. WINCHESTER, of Tamerton Follitt.

(*Medical Times and Gazette*, Dec. 25, 1852.)

Mr. Winchester, on a recent occasion, brought before the Medico-Chirurgical Society a new form of apparatus for treating fractures of the extremities generally. He urged the necessity for restoring the limb to its original normal condition, in order to ensure its entire usefulness, and the difficulty which is sometimes experienced by surgeons in attaining this end, which at times is so great as to be insufferable. The great difficulty is to secure perfect coaptation of the ends of the broken bone during the entire process of union, owing

to the limb being bound up, and thus concealed from the eye of the surgeon. Mechanical contrivances should therefore be such as do not of themselves tend to injure the shape and strength of the limb; but, by maintaining the natural form, preserve it without fear of displacement during the process of repair. This, the author thinks, cannot be accomplished with the apparatus at present in use. Taking the form of the sound limb as the guide by which to adjust the broken one, the author has been led to the construction of a splint which he considers superior to any hitherto constructed. The principle sought to be attained is to procure a model of the sound limb by means of an adjustable splint, which may then be applied at once to the injured one. The splint consists of distinct pieces, each about five inches long, which, by means of screws, can be fixed at any desired angle. In applying this splint the patient is placed on his back in bed, the sound limb extended, and the broken one placed as nearly as possible in the same position. The splint is then laid against and fastened to the outer side of the sound limb extended, and the broken one placed as naarly as possible in the same position. The splint is then laid against and fastened to the outer side of the sound limb by means of straps, and the form of the limb being thus taken, is secured by the screws. It is then immediately turned and applied to the broken limb, a wet many-tailed bandage having been previously applied and secured by the straps, the exact form and length of the sound limb and natural form of the broken one being thereby maintained. The advantages which the author claims for this apparatus are, correctness of principle simplicity of construction, facility of application, and efficiency. After its application, the parts retain their natural position, no displacement takes place through the movements of the body, and there is no necessity for re-adjustment. The perinæal bandage is not required, nor any fastenings at the foot, by which to make extension. The author thinks this splint peculiarly applicable in cases of fractured neck of the thigh-bone; and considers that, in all cases of fracture, both of the upper and lower extremity, as well as in diseased joints, it will afford more effectual support than any other apparatus. It does not give rise to any of the inconveniences due to retained perspiration, and any part of it can be removed at pleasure, so as to apply dressings, allow the escape to discharge, &c. Another great advantage is, that should passive motion of any joint be required, it can be obtained without the removal of the splint.

ART. 72.—*On the Employment of Gutta Percha in certain Luxations and Fractures of the Patella.* By M. LESUEUR.

(*Gaz. Méd. de Paris;* and *Dublin Medical Press*, March 9, 1853.)

M. Lesueur having had under treatment a case of luxation of the sternal end of the clavicle forwards, endeavoured to keep it in its place by means of a Desault's bandage applied over a thick cushion, but the displacement quickly recurred. The idea occurred to him to make use of an application of gutta percha of considerable thickness, which moulding itself on the superior part of the chest and shoulders,

would, when solidified, afford a most efficient apparatus to keep the parts *in situ*. This expedient succeeded admirably. The softened gutta percha applied to the skin adhered to it at once. This adhesive property proved of further service. Having moulded his plate of gutta percha on the parts mentioned, M. Lesueur reapplied Desault's bandage; the turns of the bandage adhering to the gutta percha, acquired a remarkable degree of firmness, which completed the consolidation of the apparatus, so that during the period of its application not a single turn of the bandage became disturbed. The patient for the first day was kept as immovable as possible, so as to make sure of the consolidation of the mould in the same form as it had been applied in. On the twentieth day, the apparatus was removed; the head of the clavicle had reassumed its normal position, which it afterwards preserved. M. Lesueur also made use of gutta percha in the treatment of transverse fractures of the patella. Two plates of this substance, of a crescentic shape, are applied, one to the superior edge of the superior fragment, and the other to the inferior border of the inferior fragment. He then brought them together by means of straps, directed obliquely across, and attached to the edges of a wooden box-splint adapted to the limb. The advantages of this simple addition to Boyer's apparatus, were followed by the most favorable results in the hands of M. Lesueur in two cases of fractured patella.

ART. 73.—*On the Treatment of Compound Fractures by "Occlusion."* By M. TRASTOUR.

(*Archiv Gén.*, vols. 29, 30; and *Medico-Chir. Rev.*, April, 1853.)

M. Trastour details, in a series of papers, numerous cases of compound fractures he had witnessed in M. Chassaignac's ward, illustrative of the favorable results that have followed their treatment by "occlusion." The treatment consists in the immediate application of a cuirass of adhesive plaster, which is retained *in situ* for several days, all surrounding inflammation being kept down by leeching, if necessary. M. Trastour's report is highly favorable; under this plan the wound far more rapidly heals, pain and traumatic fever are much diminished, as is the chance of the occurrence of nervous delirium, tetanus, erysipelas, and purulent infection. In cases in which it may be doubtful whether amputation will be required, it enables us to wait with safety for the decision, and brings these traumatic cases in nearer relation to the cases in which amputation is performed for disease, and in which its results are so much more satisfactory. Since we have adopted this practice M. Chassaignac never amputates for traumatic injuries of the fingers, however violent the injury may have been. Even when reunion does not take place, very much larger and better stumps result from leaving the case to nature.

ART. 74.—*On Provisional Callus.* By Dr. HAMILTON, of Buffalo.

(Buffalo, Pamphlet, pp. 16, 1853.)

Dr. Hamilton entertains the same views respecting provisional

callus as Mr. Paget. He thinks that "bones unite most naturally by definitive callus, and that provisional callus is accidental and secondary —the result, probably, of undue excitement alone." In several hundred fractures, he failed to find any provisional callus in nearly half the number.

### (F.) CONCERNING DISEASES IN THE BONES AND JOINTS.

ART. 75.—*On the Nature and Treatment of Some Painful Affections of Bone.* By LANGSTON PARKER, Surgeon to Queen's Hospital, Birmingham.

(Pamphlet, pp. 16, 1852.)

Mr. Parker regards many of these affections as inflammation of the medullary membrane of the cancelli, canals, and larger cavities of the bone, and proposes as a remedy, (when other means have failed,) the trephining of the bone and the introduction of a seton or tent. Fixed and continued pain, with or without enlargement, of sufficient violence to threaten the destruction of the health and life of the patient, (when other means have failed,) are regarded as a sufficient warrant for the operation.

The particulars of three cases are related. In one, the stump of the femur became the seat of violent pain after the leg had been removed for a similar affection of the tibia. The bone was trephined about four inches from the inferior extremity, and a seton passed completely through the thigh. The pain ceased as soon as a free discharge was established. The seton was allowed to remain for three months. In another case, where the tibia was the seat of mischief, the bone was trephined, and the seton passed through the limb, as in the former case. The operation caused pain, and this lasted for some days, but the former pain underwent immediate relief, and in ten days disappeared altogether. In a third case, where also the tibia was at fault, the trephine was merely passed into and not through the bone, and a tent, that was renewed daily, was substituted for the seton. Here the relief was complete and immediate. Mr. Parker also refers to three other cases in which the results of the operation were equally satisfactory. In all cases the seton or tent had to be moved or changed frequently to prevent the opening from being closed by the rapid deposition of provisional callus.

ART. 76.—*A Case of Pulsating Tumour of Bone* ("*Aneurism of Bone?*") By CHARLES D. SMITH, M.D., one of the Surgeons to Bellevue Hospital, Member of the New-York Pathological Society, &c. &c.

(*New York Journal of Medicine*, March, 1853.)

The following example of a disease which has recently attracted a good deal of attention, will be read with interest:—

Miss C—, 24 years of age, unmarried, of nervous temperament, and of previous good health, came under my care in the month of March last for a

painful swelling of the left ankle, which came on, without any apparent cause, a month or two before. The skin was slightly reddened, and painful to the touch, particularly over the internal malleolus. There was also a creaking sensation about the joint, when handled. She walked with difficulty, increasing thereby the pain and tension. The pain would occasionally leave her, and the swelling subside. It had the complexion of a scrofulous disease of the joint, but there being no evidence of struma in the system, I was at a loss to what to attribute it. Local means as well as constitutional remedies were resorted to without avail. The disease remained about the same, till the month of May, when I detected something like fluctuation over the internal malleolus,—which in two weeks became distinct. The skin was not changed in colour, neither did it have the feel, nor present the appearance of an abscess.

In the early part of June I noticed in this situation a pulsation, which from day to day become more evident, and was synchronous with the arterial pulse. Pressure on the posterior tibial artery arrested the pulsation in the tumour. At this time Dr. Van Buren was called in consultation, who confirmed my diagnosis, viz.,—aneurism of the posterior tibial artery, and at the same time, suggested that possibly the bone might be involved. She readily consented to our proposition to tie the posterior tibial; and with the view of cutting off the recurrent circulation, it was also deemed advisable to put a ligature upon the anterior tibial, where it passes over the dorsum of the foot.

On the 2d of July, the posterior tibial artery was first tied, about an inch and a half above the tumour. The pulsation ceased only for a short time, and the size of the tumour was not at all diminished. The same result followed deligation of the anterior tibial. On visiting my patient the morning following the operation, the pulsation had returned with full force, and was plainly felt through the bandages. During the month of July the disease steadily increased. The skin in the neighbourhood assumed a transparent appearance. The tumour grew larger, more firm, and resisting to the touch, and the pulsation became decided. Pressure upon the femoral as well as popliteal artery arrested it. Its true character was determined by the crackling sensation and breaking down of something like an osseous shell under the fingers. The wounds from the operation did not heal kindly. It was seven weeks before she recovered, yet her general health was not materially injured, either by the progress of the disease, or her long confinement. About the middle of July, Dr. Mott was called in, to decide the question of amputation. His opinion was, that inasmuch as pressure over the femoral artery completely controlled the pulsation in the tumor, deligation of that artery might be tried. He was also of opinion, that the ligature was preferable to compression in this particular case.

On the 23d of August, Miss C— having entirely recovered from the first operation, in the presence of Drs. Mott, Van Buren, Stone, and others, I placed a ligature around the femoral artery, immediately below Poupart's ligament, and above the profunda. Pulsation in the tumour instantly ceased, but it did not collapse as in ordinary aneurisms, neither did it diminish in size. From this operation my patient rapidly recovered, without any unpleasant symptoms. The ligature came away on the 22d day, and the wound healed readily. The tumour subsided about half an inch in the course of the week following the operation, but it soon after increased to its former dimensions.

On the 12th of September, I felt a gentle pulsation in the femoral artery in Scarpa's space, and at the same time in the tumour, since which period it has been noticed only occasionally, and then exceedingly feeble. Suffice it to say,

the disease steadily progressed. The tibia expanding, stretched the anterior tibial nerve, causing great pain. Her health, too, began to feel the influence of the disease, and rendered amputation necessary. Another consultation was held. She was advised to lose the leg, to which she unhesitatingly consented, and on the 20th November I removed it, at the place of election.

A day or two after its removal, my friend Dr. C. E. Isaacs injected the limb, through the posterior tibial artery, with a preparation of chromate of lead dissolved in ether. The skin and fascia were then removed, and exposed the periosteum thickened. The shell of bone under it was broken down, and in some points partly absorbed. When cut into, there was presented a soft, brain-like mass, of a reddish-brown colour, mixed with the injecting material. Upon turning this out, it was discovered that the lower end of the tibia was absorbed, for about half an inch. The cartilage lining the surface, articulating with the astragalus, was preserved. The bone was expanded into a thin shell, the cancellated structure gone, and its place occupied by the matter described. No vessels were found entering into the tumour, although the bone and neighbouring parts were exceedingly vascular. The other tissues were healthy.

## Art. 77.—*Iodine Injection into Joints.* By M. Velpeau.

(*Presse Médicale de Belge;* and *Dublin Medical Press*, Jan. 5, 1853.)

Amongst the affections of the joints, effusion into them is a very common affection, but is only serious as a symptom of the disease which accompanies it. When it occurs as a serous interarticular effusion, without any marked material lesion, recent hydrops articuli is easily cured by rest, bleeding, and topical applications, such as solutions containing muriate of ammonia or chloride of sodium. When the effusion resists these means, M. Velpeau applies a large flying blister, repeated every fifteen days, and then uses frictions with mercurial or iodide of lead ointment (the latter being preferable to the iodide of potash), aided by compression, the administration of calomel in small doses, and especially rest. There is another remedy now used—namely, the injection of tincture of iodine. M. Velpeau has only tried it twice this year; but from these two cases it is plain that the injection thus used is neither very painful nor dangerous, and that when thus cured the joint is not anchylosed. In one very bad case, particularly, the injection was not more painful than when used for the cure of hydrocele, and succeeded where the other means referred to had failed. It is necessary that the treatment by iodine injection should be made more generally known, as it is not usually practised. The two points which deter surgeons from using it are, the fear of throwing an irritating fluid into a large joint, and of anchylosis taking place in case of success.

Now, both these dangers are imaginary. There is no previous incision, but a simple puncture made. Since 1839, M. Velpeau has used this plan twenty-five times, M. Bonnet perhaps as often, so that with cases of the same kind, related by Berard, and since by M. Jobert, Malgaigne, and other surgeons, there are more than one hundred cases of these joints having been punctured and treated by the iodide injection, and none of the patients have had any unfavorable symptom. The swelling, with slight redness, which appears after the operation,

only shows that a natural process is going on, such as takes place in a hydrocele, and is resolved without the application of leeches, &c.

As to the danger of anchylosis, it is equally imaginary. M. Velpeau has seen these patients long after the operation, and in all the movements of the joints were preserved. It is, in fact, in these cases, as in hydrocele, the cure can be effected without the obliteration of the serous sac; or if adhesions do take place, they yield after a time, and the function of the joint is restored, so that this is no serious objection; and, as on the other hand, there is complete cure in one half the cases, and very marked amelioration in the other, it is to be concluded that the iodine injection, under such circumstances, when as yet there is no induration, is suitable, and the more so as its use does not prevent that of other accessory means of cure.

## (G.) CONCERNING AMPUTATION AND OTHER OPERATIONS.

### ART. 78.—*On Immediate Amputation after Injuries.* By Professor W. E. HORNER.

(*Philadelphia Medical Examiner*, Feb. 1853.)

The surgeon most influential in obtaining the present professional conviction in favour of immediate amputation after injuries requiring the resection of the limb, is unquestionably the celebrated Baron Larrey. His surgical life began in 1789, and was continued with great activity for the next twenty-six years, when the downfall of the Emperor Napoleon composed the disturbed state of Europe. In this long service he was the constant attendant of his celebrated master, and present at all his great battles as Surgeon-in-Chief. His amputations were sometimes fifty or sixty a day, and, on one occasion, amounted to two hundred. Seeing for himself to such an amazing extent, and receiving the most authentic reports from all quarters, it would be difficult to find elsewhere such an amount of information. It would appear that under his observation more than three fourths have recovered, which he ascribes to a more correct appreciation of the time for operating, to more methodical dressing, and to a more simple and less painful process than in preceding times. His rule is, that when a limb is so shattered that it cannot be saved, amputation should be done in the first twenty-four hours.

Immediate amputation is, however, far from being the universal doctrine of the French schools. The Baron Percy, disallowed it in his manual for army surgeons, published in the year 1792, but understood to have been well received at a comparatively recent date. And Blandin, so late as 1829, leaves us with the same conclusions in regard to his sentiments.

The American surgeons, in the war of 1812, followed to a large extent the prevailing French and English practice of that period; among them we may mention Dr. Mann; yet he states that after the battle of Little York and Fort George, a less number survived primitive than consecutive amputation. Three or four, it appears, died immediately after the operation, whereas there was not a single case

of death during the campaign (1813) occasioned by consecutive amputation. We regret that he has not furnished us with the results of more than thirty amputations executed after the battle of the 11th of September, 1814, on Lake Champlain, rendered more memorable by the naval victory of Commodore M'Donough. Dr. Amasa Trowbridge, also an experienced surgeon of that time, and still alive, has given his testimony in favour of immediate amputation when there is no prospect of the ultimate restoration of the limb.

### (H.) CONCERNING ANÆSTHETICS.

ART. 79.—*On Oxygen Gas as an Antidote to Poisoning by Chloroform.* By Dr. ABRAHAM, of New York.

(*Canada Medical Journal*, Jan. 1853.)

The following case is related in support of the idea that the inhalation of oxygen might be very beneficial in the asphyxia caused by chloroform and carbonic acid or by drowning:—

CASE.—A young man attached to the Laboratory of the New York Medical College, writes Dr. Abraham, became asphyxiated from the inhalation of the vapour of chloroform; and so far had its effects been carried, that he became pulseless, and all hopes of his resuscitation abandoned: and, as all the usually recommended remedies had been tried without any success, nothing but the death of the young man was looked for, when I proposed, as a *dernier resort*, the application of *pure oxygen gas* as the only chance by which resuscitation could be brought about; but at the time the proposal met with opposition from the medical men present, who were anxiously watching what seemed to be the expiring efforts of the poor boy, expecting each moment to be his last. Having however consented, the gas had not been more than a few seconds applied to his nostrils, when he who was apparently beyond the help of human aid, and absolutely *in articulo mortis*, arose and placed himself on a chair, proving most conclusively how correct I was in proposing the application of oxygen gas as a remedy against the deleterious effects of chloroform as an anæsthetic.

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## SECT. II.—SPECIAL QUESTIONS IN SURGERY.

### (A.) CONCERNING THE HEAD AND NECK.

ART. 80.—*New Operation for Double-Ectropion consequent upon a Burn.* By M. MIRAULT, of Angers.

(*Nouvelle Encyclogr. des Sciences Med.*, Oct. 1852.)

This operation consists in the removal or division of the cicatrices which evert the eyelids, and in uniting the eyelids by sutures after having pared away their ciliary margins. The eye is then left closed up until the surrounding wounds have healed, and the contractility of the new cicatrices has passed of, when the eyelids are divided and the

eye restored to the light. This operation has been successfully practised in two instances. The first was a case of double-ectropion of the right eye in a girl aged 28, where the deformity was so great that the upper eyelid was confounded with the eyebrow, and the lower one with the cheek. In this case the eyelids (which were adherent on the fifth day) were allowed to remain closed for twelve months, during which time oily frictions were assiduously employed over and around the eye; and, with the exception of a slight degree of eversion in the lower lid, the result was perfectly successful. The particulars of the other case are not given, but they are stated to have been very similar to those of the first.

This operation is not recommended in cases of *single* ectropion.

ART. 81.—*Application of the Eye-Speculum to the diagnosis of Eye-diseases.* By F. C. DONDERS, of Utrecht.

(*Edin. Monthly Journal*, April, 1853.)

The following account of a modification of the eye-speculum and its application to the diagnosis of ocular disease, is translated by Dr. Robertson, the editor of the 'Edinburgh Monthly Journal,' from the 'Nederlandsh Lancet,' Derde serie, Eerste Jaargang, fol. 739, &c. :—

In a former Number of this periodical (October, 1851,) I gave a simple account of a small work by Helmholtz, entitled "Beschreibung eines Augenspiegels," assuredly without expecting that it would appear a few months afterwards in another language, among the original articles in the 'Annales d'Oculistique.' Whilst I was waiting for an eye-speculum to be made for me, by Rekos at Königsberg, under the direction of Helmholtz, Epkens, the instrument maker at Amsterdam, guided by my account of the apparatus, endeavoured to construct it in a considerably improved form. I saw his alterations with much interest, but reserved my opinion as to their utility, till I should have an opportunity of comparing Epkens' speculum with one of the original model. When this was done, I found that Epkens' speculum was in many points preferable, and likely, in his hands, to be still further improved. Instead of the parallel glass-plates, inclined by the polarising angle, Epkens employs as a reflector common mirror glass, inclined at a somewhat variable angle, and from the centre portion of which the metallic coating is removed, so that a clear circular space of three lines in diameter is left. By this means the reflection is made much more powerful; and as the eye under examination is close to the mirror, the rays are so cast back from the strongly-glancing metallic surface of the glass, that they are thrown upon the portion of the retina which we desire to inspect. For, indeed, although the less amount of reflection at the centre of the glass is, at some distance, distinctly appreciable, the eye under examination cannot perceive this at all, when it is situated at the proper distance from the speculum—a proof that the retina, even immediately behind the centre of the mirror, is illuminated in a sufficiently uniform manner by the diffuse-image of the reflected light.

A second alteration consists in combining with the speculum a cylindrical tube of 15 centimetres, = 6 English inches, long, by 3·5 centimetres, = 1·4 English inches, wide. To the outer end of this is fixed the lamp, whose rays are to reach the mirror through the tube; while a large thin black disc is attached to the body of the cylinder, screening the eye both of the observer and

individual under examination, from any direct rays from the source of light. In the tube a lens may also be placed to magnify the reflected image.

In the last speculum made by Rekos, there was a disc, having the form of a diaphragm with eccentric axis, carrying near its margin four common lenses of different powers, which when the disc was turned, might be alternately adapted to the observer's eye. The lens best suited for distinct vision can be thus easily selected, while in operating with the original instrument, it was necessary to fit one lens after another into the eye-piece, in order to make a choice. This improvement likewise has been adopted by Epkens.

Finally, and to this point we attach much importance—the whole apparatus is fixed to a stand, which can be screwed at the requisite height to a table.

We found, then, Epkens' speculum preferable, from its more strongly illuminating the retina; while, in order to conduct an observation, it was not necessary to exclude all daylight from the chamber, the reflected image on the cornea being hardly more an obstacle than when Helmholtz's speculum was used. But, above all, it appeared to us, that the fixing of the whole apparatus, including the lamp, was a great improvement. For we found it excessively difficult to manage Helmholtz's speculum with the hand, and only now and then obtained with it a momentary view of the retina. We willingly attribute this to our own want of dexterity; and, indeed, we have the proof in what Helmholtz has seen, that the difficulties connected with the use of the instrument in its first form, may, by repeated trials, be overcome. But an instrument is certainly preferable, which can be used by those who have less of practice and dexterity; and, in this point of view, Epkens' instrument assuredly excels. It is true that, with the fixed apparatus of Epkens, the movements of the eye necessary for the successive exploration of different parts of the retina cannot be followed; but there is no difficulty whatever, when from looking too much upwards, downwards, or sidewards, the pupil is not placed immediately behind the centre of the reflector, by gently moving the patient's head with the hand, in bringing it into the requisite position. The examination may be continued for the time that may be necessary, without any uneasiness for the eye of observer or patient, for Epkens has conveniently obviated the disagreeable propinquity of the faces (*bouche-à-bouche*) by the interposition of a velvet flap hanging from the cylinder.

We have already examined many eyes with this apparatus, and remarked, that the brilliancy of the reflection in pupils of like width, varies considerably in different individuals. It is not proposed to enter at present upon a description of all these physiological differences. We wish this communication to be regarded as a preliminary one, written solely with the view of showing that Helmholtz has not indulged too visionary a prospect as to the diagnostic value of his apparatus, and that he has conferred a real service no less upon ophthalmic surgery than upon physiology.

One of my first cases was a man of thirty-six years of age, who had, a short time before, arrived here from Surinam, and who, while there, had three years ago remarked one morning, that straight objects appeared to his right eye crooked. Insensibility of about two thirds of the outer and lower part of the retina had gradually followed, the central part corresponding to the axis of vision being included in the diseased condition. He could thus only somewhat indirectly distinguish objects placed below and to the outside of the eye, images from this quarter being of course projected upon the sound portion of the retina. As the direction of the axis of vision was somewhat disturbed, there was also this peculiarity in the case, that in the course of three years the patient had

not learned to judge of distance quickly and correctly by means of the *left* eye, although it was neither long nor short-sighted, and possessed considerable power of accommodation. If he wished to fill a wine-glass, he commonly poured the liquid to its near or far side; and, when shooting, sometimes shouldered his gun at a passing insect, taking it for a bird.

After the application of belladonna, the ordinary mode of examination revealed nothing. I then, in company with my colleague, Van Goudoever, examined the eye with the speculum. We both perceived, with perfect distinctness, at the side of the blood-vessels, one or more dark, almost black, blotches, which, from their somewhat red glance, appeared to be blood-coagula. Further, over the whole diseased portion of retina, the reflection was exceedingly irregular,—here bright white,—and there again so weak, that little except the large blood-vessels could be distinguished,—there were besides a number of rough parts, interspersed with unmistakeably lighter and more shadowy points. This examination accordingly quite confirmed our suspicion, that a limited effusion of blood between the choroid and retina, or in the latter membrane itself, had been the cause of the sudden distortion of objects (which must necessarily have been the consequence of displacement of the parts of the retina); and that a chronic inflammation had followed, and extended over two thirds of the retina.

A second case was occasioned by a wound from a sharp arrow, received many years before, on the inner side of the eyeball, and which had probably penetrated deep enough directly to implicate the retina. Blindness of this eye had, in the course of one or two years, followed; and there only remained some slight power of vision in a small portion of the retina. Here we first found a place where the black pigment was quite uncovered, and surrounded with a white, strongly reflecting margin; then immediately outside the entrance of the optic nerve, we distinguished an almost black arch, shaped like a positive meniscus, and which might have been regarded as a tear in the retina, had not two blood-vessels belonging to the membrane been distinctly seen stretched across the dark space. Helmholtz asserts that he usually distinguished a pale shadow, probably derived from the "plica semilunaris." We have likewise observed something of the sort in sound eyes, but nothing which, in point of darkness, could at all be compared with what was seen in this case. Besides the arch was wanting in the same patient's sound eye. Further, the blood-vessels seemed here and there to end as if cut short; and some of them were alternately wider and narrower, which we never have observed to be the case in sound eyes. Finally, the reflection from the tissue between the larger vessels was unequal, but not in a degree which could have authorised any conclusion from this circumstance alone, as to a morbid condition.

We could add here various cases, but content ourselves in the meantime with these two,—the most remarkable which we have as yet met with, our sole object at present being to illustrate the practical use which may be made of the eye-speculum.

## Art. 82.—*On Phosphene, or the Luminous Spectrum produced by Pressure on the Eyeball.* By M. Serre, of Alais.

(*Assoc. Med. Journ.*, Feb. 4, 1853.)

Several articles have appeared in the French medical journals during the last two or three years, on the subject of phosphene, and the *Gazette Médicale* for January 15th contains a summary of some

observations made by M. Serre, of Alais, at a meeting of the Academy of Medicine.

Abrupt pressure on the eyeball, behind the line of juncture of the cornea and sclerotic, causes, at the *opposite point* in the interior of the organ, a sensation of a luminous ring. It varies in colour: it is generally whitish—sometimes blueish. The included space may be quite dark, or slightly clear; in the latter case, it contains a second ring, concentric with the first, and of a deep tint. This annular luminous appearance constitutes *phosphene.*

The ring is sometimes quite circular, sometimes elliptical, sometimes interrupted at one or more points. According to M. Serre, the ring is never entire; it always presents a lacuna, which is invariably directed backwards, and is less in the image on the temporal side than in others, especially in the supraorbital image. This indentation has not been noticed by Müller or by Brewster, who have directed particular attention to phosphene. Dr. Dechambre, who writes the notice of M. Serre's communication in the *Gazette Médicale*, doubts whether the interruption is of so constant occurrence as is described by M. Serre. He has several times succeeded, by pressure on the inner side of the eye, in producing an unequal circle, broken at a number of points, but *without a lacuna.* A slight degree of pressure gave rise to the appearance of a segment of a ring; and probably the interruption in the circle would be due to insufficient pressure.

The phenomena lasts only one or two seconds, if the pressure be rapidly made, so that the eye receives a sort of shock. If the pressure be continued, the image is gradually effaced, in a variable space of time. Its intensity is greatest when the eye is in the greatest amount of darkness. The experiment succeeds best just after transition from a very light to a dark medium.

At the same time with the image on the opposite side, there is often perceived, at the seat of the pressure, a second image like the first, but smaller and less luminous, and requiring great attention to perceive it. The indentation appears turned in the same direction as that of the other image. The double spectrum is produced whether the eyes be closed or open.

Several explanations of this phenomenon have been offered. Sir D. Brewster explains it by supposing that the retina undergoes pressure at two points—one at the part directly pressed on, and the other in an opposite direction. A ring of liquid is formed round each of these points. If pressure on the cornea does not produce phosphene, it is because it ends in the *punctum cæcum.* This explanation, which is accepted by M. Serre, is at present that which is most satisfactory.

M. Serre has endeavoured to apply this phenomenon to the physiology and pathology of vision. What is the meaning of the phenomenon? It means first, that a mechanical impression on the retina gives rise to a sensation analogous to that produced by its proper stimulus, light; secondly, that the impression made is transmitted to the opposite point of the retina, in virtue of a physiological law, and without the intervention of known physical laws. M. Serre states that the crystalline lens is traversed at its centre, by the line passing from the point of contact to that where the object is perceived. If

this be true also for images formed by the action of light, the inversion of the image produced by the crossing of the rays becomes corrected without the intervention of any operation of the mind. This theory is, however, founded on uncertain data, and scarcely agrees with the explanation of phosphene given by Sir D. Brewster, and adopted by M. Serre.

M. Serre has applied the phenomenon of phosphene to the diagnosis of some diseases of the eye, especially paralysis of the retina. The phenomenon is not always produced at will, nor at the first trial; but it is impossible to find it absent during several days without concluding that the retina has lost its power.

ART. 83.—*Case showing that loss of Contractility in the pupil is caused by Paralysis of the Third Nerve.* By Mr. JOHN F. FRANCE.

(*Guy's Hospital Reports*, vol. viii, part i, p. 79.)

The subjoined case is related as an addition to a series already published in proof of the dependence of the contractility of the pupil upon the integrity of the third nerve (motor oculi) :—

Mary K—, æt. 42, a married woman, mother of five children, of whom the youngest is 18 years of age, first discovered an affection of the eyes in January of the current year, when she perceived a mistiness of vision, which she attributed to the effects of blisters applied unavailingly for the relief of preceding bad headache. At the age of 14 she had had a severe fit; another in the course of the last summer; and a third wherein the mouth was drawn to one side, about ten weeks before applying at the hospital. With these exceptions her general health had been good.

On August 14th, 1851, she presented herself among the out-patients of the Eye Infirmary, and gave the foregoing account of herself. Besides numbness and tingling of the extremities, headache, vertigo, &c., she was the subject of the following local symptoms :—In the left eye, the media were transparent; the pupil was of medium size, free and active, but the vision imperfect; ordinary sensation, and all motions of the globe and lids, were preserved.

The right eye projected considerably in advance of its true position; the lids could be closed at will; but the globe at first sight appeared fixed, for the powers of abduction, adduction, and depression were lost; yet that of elevating the lid and the globe was retained. Sensation of the surface of the eye and of the integuments, in the neighbourhood, was perfect. Vision was good, better than that of the opposite eye, which she habitually kept closed to prevent confusion; yet the pupil, though free from adhesions, remained dilated and fixed, manifesting the slightest trace only of mobility. There was, of course, paralysis of the sixth and inferior division of the third nerve of the right side: the sixth, I have elsewhere shown, exercises no influence over the pupil. Small doses of mercury, and mild tonics were prescribed, and a seton was inserted over the right mastoid process.

*September 18th.*—The patient had lost the headache, vertigo, and numbness, &c., and the defective motions of the globe together with the mobility of the pupil were returning. And, under a continuance of the same general plan of treatment, the eyes eventually returned almost completely to their normal condition.

## Art. 84.—*Case of Dislocation of the Eye.* By Dr. Jameson, Surgeon to Mercer's Hospital.

(*Dublin Medical Press*, Jan. 5, 1853.)

The subjoined case is chiefly remarkable from the return of vision to the injured eye, though, as Mr. Jacobs remarked upon it, it is not improbable that the injury may have appeared greater than it really was, owing to some unusual shallowness in the orbit, which might allow the eyelid to be tucked behind the eyeball without any great protrusion of that organ.

Peter Nowlan, ætat. 30, a powerful, able, and muscular man, a corn porter, was admitted into Mercer's Hospital on the 3d of November, at half-past twelve at night. His wife informed me that he came home that evening at ten o'clock in a most intoxicated condition, and, while staggering about his room, struck his right eye against a small iron hook or nail that was in a dresser, which entered at the outer angle of the upper eyelid of that side, and when she went to his assistance discovered his eye protruded from its socket. She was most anxious to remove him at once to hospital, but could not succeed in prevailing on him to go until half-past twelve at night, when, in a few minutes after this, I saw him.

He was very boisterous and unruly, had a large check apron held close up to his eye, which he kept constantly rubbing and pressing against it. On its being removed, he presented a most peculiar, and, I might add, frightful appearance. There was the right eye protruded out of the orbit, firmly fixed and immoveable, staring, elastic to the touch, and devoid of all power of vision. The cornea was dry, cloudy, and rather opaque, pupil moderately contracted, and uninfluenced by the light of a candle. There was no extravasation of blood, nor was there any vascularity of the conjunctiva, although its reflection from the upper lid on the globe of the eye was partially torn through. The inferior margin of the upper lid was not visible, as it was placed behind the globe and spasmodically closed.

With difficulty I could get him restrained, as he was such a powerful man; but having accomplished it, I then, with two fingers of my left hand, elevated the upper lid, at the same time, with the finger and thumb of my right, pressed the ball of the eye, and immediately it was drawn back with a distinct snap, and the lids closed over its anterior surface, I now, for the first time, observed the small wound before alluded to at the outer angle of the upper lid, but could not ascertain or form any conjecture at the time what amount of injury he might otherwise have sustained. I therefore had him conveyed to bed, and ordered cold to be assiduously applied to the part for the remainder of the night.

4th. The following morning, at visiting hour, we found him sober, but recollecting little of what had occurred. His eyelids were a little swollen; there was some slight vascularity of the conjunctiva; the *cornea was clear, shining*, and moist, and the tears ran down the cheek; he could distinguish the day-light; complained of pain in the head, and a deep pain in the globe of the eye, with full pulse. He was ordered to have ℥xvj of blood taken from his arm, bowels to be freely opened, and the cold to be continued to the part.

5th. Lids less tumid; pain and vascularity of conjunctiva almost gone; complains of the sensation as if gravel was between the lids; vision improved, but sees objects imperfectly, as through a thick haze. Ordered the tart. ant. mist., low diet, and the cold application to be continued.

6th. All pain gone; conjunctival vascularity less; sensation as if gravel were beneath the lids gone; vision nearly restored; has complete power over all the motions of the eye. Continue all.

7th. Convalescent; no suffusion; no pain; vision complete.

9th. Discharged cured.

## Art. 85.—*On the Removal of Foreign Bodies from the Cornea.* By M. Chassaignac.

(*Gaz. des Hôpitaux*, No. 56; and *Medico-Chir. Rev.*, Oct. 1852.)

M. Chassaignac was for long, in common with most other surgeons, in the habit of endeavouring to extract foreign bodies that had become impacted in the cornea, by means of a cataract needle, during any interval of immovability of the eye that could be seized. This is, however, sometimes both a difficult and dangerous procedure, and this in part from the great mobility of the eye, and in part from the colour of the imbedded body. Pieces of metal become rapidly oxidized, and assume a rust colour, which is easily distinguished in light or blue eyes, but which so resembles the colour of the iris in dark eyes that it becomes a matter of difficulty to bring the point of the needle exactly where it should come. Again, the body may be so minute, that, although capable of producing a keratitis, it is not discernible to the naked eye.

The movability of the eye increases the difficulty; and M. Chassaignac endeavours first to obtain what he calls an *immovability by tolerance*, by touching the ocular surface several times with the back of the needle. There are subjects in whom this education is difficult and tedious; and in very embarrassing cases, chloroform may be had recourse to, with excellent effect. This is, however, not usually proper for so slight an operation; and M. Chassaignac then steadies the eye by means of Lusardi's speculum, and magnifies the size of the object to be removed by a good lens. Upon an emergency, the surgeon may hold both the speculum oculi and the lens in his left hand; but it is preferable, after having fixed the former, to give it to an assistant to hold. The patient kneels down and sits on his heels, and the eye being now steadied, and the exact locality of the foreign body ascertained by the lens, its removal becomes easy.

All persons accustomed to this class of accidents must have been struck with the terrible intensity of the inflammatory symptoms induced by particles so minute, their persistence and aggravation as long as the foreign bodies remain, and their sudden diminution and remarkable benignity from the instant the exciting cause is removed. These cases are advantageously contrasted with inflammations of the cornea from other causes, which so obstinately resist the most active treatment, and never disappear with the like rapidity. The lesson to be drawn from this is, that predisposing causes play the greater, and local or direct causes only the smaller, part in ocular inflammations.

ART. 86.—*A Novel Rhino-plastic Operation.* By R. L. M'DONNELL, M.D., Surgeon to St. Patrick's Hospital, at Montreal.

(*Canada Medical Journal*, Nov. 1852.)

In the following case the edges of the fistulous opening are split so as to separate the true skin from the subjacent textures, and then the skin is made to stretch over the opening. It is thus related by Dr. M'Donnell:—

Mr. —, aged 30, two years ago, in an attempt to save an old man, who was maltreated by two strong young men, was knocked down and set upon by these men, and whilst one of them was engaged in kicking and cuffing him, the other attacked him savagely with his teeth and bit out several pieces from about his face and hands, amongst others, a portion of one ear, and the entire cartilage of the right ala of his nose, leaving but a small portion connected with the upper lip. He recovered soon from the effects of the beating, but the wound of the nose was a long time in healing, and left the nostril exposed on that side. He consulted a surgeon about a year ago, who undertook to remedy the defect by engrafting on the cicatrix a portion of skin removed from the back of the patient's hand. This was accordingly done—the piece was removed, the edges of the wound pared, and the new substance retained in situ by means of adhesive plaster, and, as might be expected, no union took place. The patient now despaired of obtaining relief, and resigned himself to his condition, and selected an occupation that required withdrawal from society, for the annoyance he experienced from the examination and curiosity of strangers was very distressing to him, being of a peculiarly sensitive and retiring disposition. He happened, however, to hear of a case in which I had remedied a somewhat similar defect, and determined to come to Montreal to consult me. On his removing the adhesive plaster with which he had concealed the deformity, I was struck with the peculiar shape and size of the deficiency in the nostril, which could hardly have been produced in any other way than that already mentioned, and in reply to my question, he admitted the fact. I recommended him to take a private ward in St. Patrick's Hospital, and stated my opinion, that an operation would remedy the defect. Accordingly on October 4th, assisted by my colleagues, Drs. David and Howard, and by Dr. Walter Jones, I proceeded to perform the operation in the following manner:—A small narrow bladed knife, (which I had found extremely useful in another rhino-plastic case, operated upon in the hospital a few days before,) was introduced between the skin and nasal bone, and carried upwards towards the edge of the orbit, care being taken to keep the blade close under the skin. When the point was felt in this situation, the edge was carried towards the mesial line so as to separate the integument from the bridge of the nose, which was rather prominent. The dissection being completed in this situation, the knife was carried downwards, still close under the skin, until it reached a level with the under-edge of the nasal bone. The blade was then withdrawn, and entered under the remnant of cartilage before alluded to, as being still connected with the cheek, and pushed towards the ear, for about two inches, when the edge was turned upwards, the dissection carried on until it joined that before made. By this plan, the skin was detached off the subjacent parts, from the median line of the nose all over the cheek, and the scalpel passed freely about in all directions. Having thus made a large flap, the edges of the cicatrix were pared and brought together, and the stump of cartilage joining the cheek being brought into contact with the tip of the nose, was there maintained by a Dieffenbach's pin and twisted suture; two or

three points of suture served to bring the remainder of the wound in apposition, and thus, what was before a semilunar cicatrix, appeared an incised wound, whose edges were in one line. To enable me to avail myself more fully of the flap detached from the cheek, an incision to the extent of a little more than half an inch was carried from the outer edge of the nostril, by which the tension was taken off the new ala nasi, and a plug of lint being introduced into the nostril, the dressing was completed: the loose integument being shoved from the cheek towards the nose, and there retained by means of compresses and adhesive plaster. The operation was in this manner performed, without making the least disfigurement of the face. Nothing remarkable ensued during the month the patient remained under treatment. The needles and sutures were removed on the fifth day, union having taken place, but the remainder of the wound continued to suppurate for the next fortnight. He now has a complete nostril—the nose is straight and prominent, and except, that on the side operated upon, the lower edge of the ala nasi, at its junction to the cheek, descends about the twelfth of an inch more than the other, no difference is perceptible as nothing marks the line of junction but a fine cicatrix, which has little appearance of being the result of a surgical operation.

The plan of operation in the foregoing case is a modification of the French method of autoplasty, or as it is sometimes termed, *la methode par glissement*. It differs, however, from the French method, in the fact of the dissections being subcutaneous, which it is hardly necessary to mention, is a decided improvement, for it is often a question, whether the plan adopted to remedy some of these deformities does not leave a greater amount of disfigurement than that for which the operation was undertaken—and the practitioner who has only seen drawings and woodcuts of rhino-plastic operations, can have but little idea of what shapeless masses of flesh, even the most successful of them are, when a whole nose has to be made. But when a portion only of the nose is lost, then, as in the instance before us, the deformity admits of being remedied. The plan I adopted is beyond measure preferable to that of taking a flap from the cheek, twisting it round and adapting it to fill up the chasm, for besides the scar on the cheek, the want of any portion of cartilage prevents a nostril being successfully made, so that whenever the surgeon can save a piece, no matter how small, of the original ala, he will find that it can be made to answer better for a margin, than any piece taken from the cheek, for besides rounding off the arch of the nostril and keeping the ala distended, it retains the property of dilatation and compression, owing to the insertion of the levator labii superioris alæque nasi, being attached to it, as well as the lower fibres of the compressor nasi, and it is acted upon, simultaneously with that of the opposite side, both in the acts of respiration and the different emotional movements of the face. These peculiarities are well marked in the above case, and though not pointed out before, are in my mind of some importance, and tend materially to the success of the operation, and to improvement of the patient's appearance. Although I have mentioned that the foregoing operation is a modification of the French method of autoplasty, yet it does not appear that French surgeons have ever availed themselves of the flap made by subcutaneous dissection, and it is evident that the most recent writer on the subject is unaware of the possibility of the defect being remedied in this manner, for Jobert says, " On a réparé également par la méthode indienne le lobule du nez et même, dit-on, les ailes du nez. Pour moi, sans blâmer l'emploi de la méthode indienne pour réparer les difformités partielles du nez, je pense que lorsqu'il s'agit de son extrémité ou de ses ailes, il est préférable de tailler un lambeau aux dépens des joues ou des lèvres."

ART. 87.—*Hypertrophy and Prolapse of the Tongue.* 1. By Mr. HUMPHREY, Surgeon to Addenbrooke's Hospital, Cambridge; and 2, by Mr. HODGSON, F.R.S.

The subjoined cases and observations form the subject of a recent communication to the Medico-Chirurgical Society:—

1. *Mr. Humphrey's Case.*—Margaret K—, æt. eleven, was admitted into Addenbrooke's Hospital in May, 1847. When between two and three years old she had sore throat and hooping cough, for which powders were given, which made the mouth sore and the tongue swollen. During a fit of coughing, the swollen tongue was protruded from the mouth and remained so, continuing to increase in size to the time of her admission. At this time the tongue measured three inches and a half from the upper lip to its tip one inch and a half from the lower lip to its tip, from the angle of the mouth round the sides and tip to the opposite angle, six inches and a quarter. The circumference of the widest part six inches and a half. When drawn into the mouth to the fullest possible extent, the measurement from the upper lip to the tip was two inches. It was soft and supple, without ulceration or trace of inflammatory or other disease, except simple hypertrophy. The papillæ were enlarged, and separated by deep clefts, giving to the mass a warty appearance; this extended, in a less degree, to the part within the mouth. The colour was nearly natural; the mouth was large, the lower lip everted, and the angles depressed. The enlarged orifices of the sublingual gland were situated in front of the edge of the lip. The saliva was continually dripping, the quantity amounting during the day to more than half-a-pint. From constant pressure a curvature had taken place in the lower jaw, so that a wide interval existed between the incisors and bicuspids of the two jaws. When the molars were in contact this interval measured nearly two inches. The lower incisors and their alveoli were horizontal; the teeth encrusted with tartar; mastication could be effected without interference with the protruding organ. The os hyoides was in its natural position; the speech indistinct but intelligible; she suffered no pain. The author resolved to remove the protruding portion by the bistoury, which was passed a little to the left of the mesial line from below upwards, and a flap made on the left side by cutting forwards and outwards. The middle part was then cut through, the ranine arteries secured, and the operation completed by cutting out a flap on the opposite side. The flaps were brought together, and maintained by two deep stitches. The hæmorrhage was not very great, and was easily restrained by the ligatures. Some swelling followed the operation, which was subdued by frequent rubbing and fomentation, and the wound healed. The lips could not at first be brought together, and the thick stump could be always seen, though it never protruded. After a few days, however, the mouth could be closed; the teeth and jaw soon began to assume their natural position. This was facilitated by the use, during several hours each day, of an apparatus which made pressure on the chin, and the deformity was at length nearly entirely removed. The tongue became much lessened during the first few months after the operation, and then remained stationary. Two years after the operation, the only defect observable was a slight thickness in her speech. In the summer of 1852 she remained quite well.

A nearly similar case is then related which occurred in the practice of Mr. Crosse, of Norwich, in 1837. The patient, a female six years old, had at birth a ranula, which was opened by a surgeon; the tongue afterwards enlarged,

and hung from the mouth, no treatment being adopted. She could articulate intelligibly. Mr. Crosse was induced, on reading the paper by Lassus, to try the treatment by compression. After seventeen days' continuance of pressure by means of a bandage soaked in solution of alum, the tongue was so much reduced as to be capable of return within the mouth. After this a bandage was merely passed over the mouth, which was worn for about ten weeks, and then an elastic strap was worn, which passed under the chin and over the head, to approximate the jaws. Four months after the operation she was made an out-patient, with directions to continue the use of the chin-strap. Four months after she was readmitted, with the tongue protruded to nearly the same extent as at first. The same treatment was adopted, and in five days the tongue was again returned. Nearly a twelvemonth afterwards, the child was sick and feverish, and the tongue was again protruded, and again reduced. From that time no further protrusion took place, but the tongue remains thick; the jaws are in their natural state.

The author saw another case, in a woman aged forty-six, a patient of Mr. Ormerod, at Oxford; the general characters the same as in the two former.

In all three cases, the author observes, the disease is of a very simple nature. Examination of the amputated portion in the first case showed that nearly all the tissues had participated in the change, which was that of simple hypertrophy. It was not quite clear, however, that the muscular tissue had undergone any change; but the fibres were arranged in coarse bundles. In all the affection was to be traced, in the first instance, to inflammation; the depending position of the organ, the constriction of the lips, and other causes combining to promote the enlargement, and prevent the cure which takes place in ordinary glossitis. The author then gives his reasons for preferring amputation to other modes of treatment. He agrees, however, with Lassus, that in early cases compression is the proper treatment. Few instances of the disease have occurred in this country. A case was treated successfully by Sir A. Cooper by ligature. Mr. Syme removed the protruding portion, in another case, by the knife; but the patient died of inflammation of the tongue and parts about the larynx. Mr. Liston mentions a case in many respects similar, but in which the parts were more vascular, and were the seats of severe hæmorrhages. He tied both lingual arteries; inflammatory swelling supervened, followed by sloughing. A ligature was then applied; but the system became disordered, abscesses formed in various parts of the body, and the patient died. The affection was long ago described by various authors, and copious notes are appended by the author referring to these descriptions. The best account is by Lassus, whose description has been generally followed. He opposes the practice of removing the protruded part, and strongly recommends pressure, even in the most inveterate cases. He observes that the malady has never been known to undergo a spontaneous cure; but that, on being returned into the mouth and retained there, the swelling of the organ gradually subsides. A short account is given of three cases, described by Lassus, which were successfully treated by this method. The author observes that all the recorded cases present great similarity, and that the disease is one of sufficiently definite character to merit special notice. It sometimes originates in an inflammatory affection, but often appears to be independent of such a cause; usually it commences in early infancy, or is congenital. If early attended to, it admits of an easy cure by compression; if allowed to take its course, the prolapsing organ increases, at first in greater proportion than the growth of the child, but after a time it becomes stationary, or grows only with the general growth; even in the most aggravated cases a cure may be hoped for by long-continued pressure. Spontaneous cure rarely, if ever,

takes place. The operation of removal is not attended with much danger, and the remaining part of the tongue shows no disposition to enlarge again. In no case does the stump appear to have shrunk below its proper dimensions. The displacement of the incisor teeth, and the altered form of the jaw, form an important feature in the disease. The same change takes place, in some degree, from the contraction of the cicatrix of a burn in front of the neck. It increases the difficulty of effecting cure by compression, as the tongue, during sleep and at other times, has the tendency to protrude, owing to the want of support; and the presence of the enlarged tongue in the mouth interferes with the return of the teeth and jaw to their natural position. When the prolapsed portion is removed, these parts quickly recover their natural situations. The author refers to twenty-six cases, of which seven were treated by ligature, seven by compression, and twelve by ligature. In all a cure was effected except in Liston's and Syme's; in Siebold's the child died of fever during the recovery.

2. *Mr. Hodgson's Case.*—Harriet H—, æt. two years, was admitted into the Birmingham Hospital on the 15th of April, 1833. The tongue was enormously enlarged, hanging out of the mouth, and reaching below the chin. It fills the orifice of the mouth, and doubles down the under lip, which is always in contact with the chin. Within the lips, it presents no unnatural appearance. There is an evident constriction were it has pressed against the teeth and lips. Beyond this, it is enlarged both in breadth and thickness, measuring two inches and three eighths across, and rather more than two inches from the lip to the extremity. The child was born with a large tongue, which seemed to increase after a leech had been applied to the tip. When first seen by the author, about a year before, she was in bad health; the whole surface of the tongue was inflamed, excoriated, and extremely irritable; and believing that she would not live, he did not advise any operation. Her health, however, improved, and at the date of her admission she was as strong as infants of her age generally are. The projecting part of the tongue was of a deep-red colour; dry and rough on the upper surface, where scabs have formed in places; the papillæ are raised. She could suck as well as other children, and ate and drank as well; she could talk at sixteen months, and articulates as clearly as other children of her age. The anterior part of the lower jaw has been pressed into almost a horizontal position, together with the incisor teeth. On the 20th of April, the protruding portion was included in ligatures. A strong, curved needle, armed with a double ligature, was passed through the organ in the median line, a little distance within the mouth, and each ligature then tied as far back as possible, so as to leave a kind of tip. She did not suffer so much as was expected. She passed a quiet night. The next day the protruding portion was cold and purple. In the course of the day, the tongue, anterior to the ligature, became warmer, and blood oozed from the surface on slight abrasion. Fresh ligatures were applied, which stopped the bleeding, and the parts again became cold. On the following evening some warmth returned, and on rubbing the surface slight bleeding came on. The ligatures were renewed as before. On the 23d, the slough had nearly separated; there was no inflammation in the mouth, nor constitutional disturbance. Next day the slough was removed by cutting it away anterior to the ligatures. The tongue was quite within the lips, but very thick in the horizontal direction. The altered shape of the lower jaw prevents its being brought into contact anteriorly with the upper. On the 28th she left the hospital. Two years afterwards she was again seen; her health was then good; she could talk and eat without the least inconvenience; the tongue had undergone no morbid change; the pointed end or

tip was thick, and stood up in the mouth, but caused no pain or inconvenience; the lower jaw still projected, and the front teeth of the two jaws could not be placed in apposition.

## Art. 88.—*On the Operation for Cleft-Palate.* By Mr. Gay, Surgeon to the Royal Free Hospital.

(*Lancet*, Feb. 1853.)

The three subjoined cases are related for the purpose of showing that the aperture, which not unfrequently remains after the operation for cleft palate, may be obviated by freely detaching the soft parts from the subjacent bone by transverse incisions before bringing the flaps together in the middle line. One cause of this defect Mr. Gay conceives to be the general tension of these flaps; "for," as was observed by Mr. Lane, at the Royal Free Hospital, "these apertures heal or approximate towards closing, not so much by addition to the edges through the medium of fresh tissue, as by a stretching of the flaps generally towards the axis of the opening: in other words, the apertures are mainly closed at the expense of the flaps, and by an increase of their general tension, the result of which is, that when the call on that tension has been obeyed to the utmost, the power of further closing ceases."

Charlotte D—, aged 20, a delicate-looking girl, was admitted into the Royal Free Hospital on December 9th of last year, having a congenital cleft of the hard and soft palates, and an imperfectly-united hare-lip, with a redundancy of substance in the lip itself. Mr. Gay removed the cicatrix and reunited the lip, with considerable advantage to the patient, and she was allowed to return home for a short period.

On January 11 she was readmitted, in order to have the soft palate united, preparatory to the use of an obturator. The fissure of the hard palate was three quarters of an inch in breadth at its posterior part, diminishing somewhat anteriorly, where it tended to the left side, and terminated at a part corresponding to the interval between the left lateral incisor and canine teeth. The sides of the velum were healthy, and presented the usual muscular resistance on being drawn out. Deglutition was performed with greater ease than in some cases of cleft of the soft palate only, but her speech was almost unintelligible, and she was on that account exceedingly anxious to have the operation performed.

On January 21, Mr. Gay adopted the proceeding recommended by Mr. Fergusson, and which he has usually practised in similar cases, viz., section of the levatores palati and palato-pharnygei muscles, in order to relax the palate by depriving it of muscular action. This enabled the posterior valves of the velum to be approximated without difficulty; but the width of the cleft in the hard palate would occasion considerable tension of the flaps at their anterior part, when brought together, in consequence of the firm muscular and fibrous connection of the velum with the posterior edge of the transverse plates of the ossa palati. To prevent such strain on the vellum, Mr. Gay made a transverse incision immediately behind the hard palate: this had the desired effect, and the edges of the fissure having been previously pared, the parts were united by three sutures.

During the course of the operation, which was rather more tedious than usual in consequence of the smallness of the patient's mouth, and the unusual

depth of the soft palate, the parts bled rather freely; but the hæmorrhage was easily arrested by the use of iced water before the stitches were tied.

The inflammation following was of a healthy character; union by the first intention had taken place after four days, and two of the sutures were removed; the remaining one was removed on the fifth day, when union was complete throughout.

From the first she was allowed a necessary amount of nourishment: during the first two days, as there was some difficulty in swallowing, and she could only take a little arrowroot by the mouth, she was ordered a pint of strong beef-tea, with a glass of sherry, as an enema.

On the third day the bowels were freely relieved by a purgative draught. The palate was cleansed daily, and lightly sponged with a little myrrh lotion, which was accomplished without producing any pain.

The transverse incisions were scarcely visible by the time the sutures were removed, the divided parts having yielded to the increased breadth of the united velum.

As soon as the palate has regained its healthy tone, an obturator will be adapted to the cleft in the hard palate, thus completing the case.

Mary B—, aged 21 years, admitted under Mr. Gay's care, October 8, suffering from congenital cleft of both hard and soft palates, complicated with hare-lip and fissure of the alveolar arch, the division of the latter corresponding to the interval between the lateral incisor and canine teeth on the left side: there was also an irregular disposition of the front teeth, some of which projected in various directions; others were only partially developed, and bounded the sides of the cleft. The margins of the cleft were pared, and four sutures were introduced. The bleeding was inconsiderable, and had stopped before the stitches were tied. From the first, nutrient fluids were administered frequently, and in small quantities. After five days, the parts having united, all but a very small piece in the middle, the stitches were removed, and the small aperture left closed subsequently by granulations.

Miss W—, of Manchester, aged sixteen. This young lady was afflicted with a cleft extending, as in the other two cases, through the hard and soft palate; indeed, the hard palate was almost entirely wanting, being limited to a slight ridge on either side. The distance between the edges of the imperfectly-developed horizontal plates of the palate bones was one inch and an eighth; the distance between the anterior molar teeth being one inch and four tenths only. Owing to the absence of the lateral incisors, without any cleft of the alveolar arch itself, the alveolar processes of the superior maxillary bones took a straight instead of a curved course from behind, to their point of union anteriorly: from this condition of parts the fissure in the hard palate was angular, and diminished rather rapidly from behind forwards. The defect was one of great advantage to the young lady, and the question to be decided was, whether the soft flaps could be made to unite through the whole length, so that a gold obturator might supply the remaining deficiency. Mr. Fergusson saw this case, and doubted its practicability, owing to the extreme distance by which the soft flaps were separated. Mr. Gay determined, however, to make the trial, and adopted the method recommended by Mr. Fergusson, but in addition practised the transverse incisions before alluded to; by this means the flaps were released, and could be brought together mesially without tension. Four sutures were employed, and they were removed on the fourth day. This case was eminently successful, and an obturator was supplied, admirably adapted to the case, by Mr. Tibbs, the dentist, of Finsbury-place, which has been worn since with the greatest comfort.

ART. 89.—*On the Application of Nitrate of Silver in Acute Tonsillitis.* By M. HERPIN.

(*L'Union Médicale*, Nos. 75, 76; and *Medico-Chir. Rev.*, Oct. 1852.)

M. Herpin states that he finds the application of nitrate of silver in substance to be a most excellent mode of abridging the duration of acute tonsillitis, preventing suppuration in persons liable to this occurrence. Even in the most intense cases, accompanied by great febrile action, he has not had to make more than three applications. If suppuration has already occurred, the application is of less avail, and is then, on account of the closure of the jaws, often impracticable. The application must be carefully and methodically made opposite a window. If the velum is inflamed, it should be touched in passing from one tonsil to another, as also may the uvula,—but as a spasm of the fauces is often then induced, this should be left to the last. If the application is made within the first twenty-four hours, a single one often suffices: and this happens in persons who are liable to relapse of this affection, and have already derived benefit from the caustic. If seen later, two applications at the interval of a day, or even three, are required, although the first at once checks the progress of the disease. More than twenty-four hours should never be allowed to elapse between the applications. Since he first recommended this practice, many of M. Herpin's colleagues at Geneva have adopted it, and with the best effects, in securing the rapid dispersion of a disagreeable though not a dangerous disease.

ART. 90.—*Case of Fracture of the Processus Dentatus, in which the Patient lived and continued to follow an active employment for Five Months.* By Dr. PARKER, Professor of Surgery to the College of Physicians and Surgeons, New York.

(*New York Journal of Medicine*, March, 1853.)

The subjoined case, which proves beyond a question that complete detachment of the odontoid process need not be immediately fatal, occurred in the practice of Dr. Bigelow, and was communicated by that gentleman to Dr. Parker.

The patient, Mr. G. B. Spencer, was a man of 40 years of age, a milkman by occupation, of medium height, nervo-sanguine temperament, of active business habits, and capable of great endurance. His life was one of constant excitement, and he was addicted to the free use of liquors. He suffered, however, from no other form of disease than occasional attacks of rheumatism, for which he was accustomed to take remedies of his own prescribing, which were generally mercurials, followed by liberal doses of the iodide of potassium, "to work it all out of the system."

On the 12th of August, 1852, while driving a "fast horse" at the top of his speed on the plank road near Bushwick, L. I., he was thrown violently from his carriage by the wheel striking against the toll-gate. He alighted upon his head and face, about fifteen feet from the carriage. Upon rising to his feet he declared himself uninjured, but soon after complained of being faint: after drinking a glass of brandy he felt better, got into his carriage

with a friend, and drove home to Rivington-street in this city, a distance of more than two miles. There was so little apparent danger in his case that no physician was called that night. Early on the morning of the following day, Dr. B. was called to visit him. He found his patient reclining in his chair, in a restless state, and learned that he had suffered considerable pain in the back part of his head and neck during the night. He was entirely incapacitated to rotate the head, which led to the suspicion of some injury to the articulations of the upper cervical vertebræ; but so great a degree of swelling existed about the neck, as to prevent an efficient examination. There was no paralysis of any portion of the body, his pulse was about 90, and his general system but little disturbed. Warm fomentations were applied to the neck, and a mild cathartic administered. On the following day there was no particular change in his symptoms, but as there existed considerable nervous irritability, tinct. hyoscyami was applied as an anodyne, and fomentations of hops applied locally. On the third day leeches were applied to the neck, and after this the swelling so much subsided, that on the fifth day an irregularity was discovered to exist in the region of the axis and atlas, which had many of the features of a partial luxation of these vertebræ.

At this time he began to walk about the room, having previously remained quiet on account of the pain he suffered on moving. He persisted in helping himself, and almost constantly supported his head with one hand applied to the occiput. He often remarked, if he could be relieved of the pain in his head and neck he should feel well. He began to relish his food, and the swelling nearly disappeared, at the end of a week, leaving a protuberance just below the base of the occiput, to the left of the central line of the spinal column, with a corresponding indentation. Notwithstanding strict orders to remain quietly at home, on the ninth day after the accident he rode out, and in a day or two after returned as actively as ever to his former occupation of distributing milk throughout the city to his old customers. During the following four months no material change took place in his symptoms, although he constantly complained of pain in his head. For this period he did not omit a single day his round of duties as a milkman, which occupied him constantly and actively from five o'clock in the morning to nearly noon. On the 1st of November Prof. Watts examined him, and inclined to the opinion that there was a luxation of the upper cervical vertebræ.

About the 1st of January, 1853, the pains, from which he had been almost constantly a sufferer, became more severe, and he was heard to complain that he could not live in his present condition: he remarked also that he had heard a snapping in his neck. After going his daily round on the 11th of January he complained of feeling cold, and afterwards of a numbness in his limbs. In the evening he had a chill, and complained of pain in his bowels. He passed a restless night, and arose on the following morning about six o'clock: he was obliged to have assistance in dressing himself, and experienced a numbness of his left, and afterwards of his right side. He attempted to walk, but could not without help, and it was observed that he dragged his feet. He sat down in a chair, and almost instantly expired at eight o'clock, a. m., on the 12th of January, precisely five months from the receipt of the injury.

*The autopsy was made thirty hours after death*, by Dr. C. E. Isaacs, in presence of several medical gentlemen.

Muscular development uncommonly fine; an unusual prominence observed in the region of the axis and atlas. On making an incision from the occiput along the spines of the cervical vertebræ, the parts were found to be very vascular. These vertebræ were removed *en masse*, and a careful examination

instituted. The transverse, the odontoid (ligamenta moderatoria), as also all the ligaments of this region, excepting the occipito-axoideum, were in a state of perfect integrity: this latter was partially destroyed. A considerable amount of coagulated blood was found effused between the fractured surfaces, some of it apparently recent, but much of it was thought to have occurred at the time of the accident, and afterwards to have prevented the union of the bones. The spinal cord exhibited no appearances of any lesion. The odontoid process was found completely fractured off, and its lower extremity inclining backwards towards the cord. Death finally took place, doubtless, from the displacement of the process, during some unfortunate movement of the head, by which pressure was made upon the cord. The destruction of the occipito-axoid ligament, which would otherwise have protected the contents of the spinal cavity, must have favored this result.

It would at first seem impossible that life could be prolonged, at least for any length of time, in an accident of this nature; and such was the prevailing opinion until recently. If, however, we reflect upon the anatomy of this region, and consider that the only lesion was a fracture of the odontoid process, the contiguous vertebræ remaining nearly in their natural relations, and the ligaments maintaining their integrity, our first impressions will change. As it is the office of this process to steady the head upon the trunk, that function can be equally well performed externally by the hands, as was done in this case and others to which we shall allude. But yet it is remarkable that a person suffering this accident should be able, for such a length of time, to follow, actively and unremittingly, a rough occupation with little or no inconvenience. He was liable to death from the most trivial accident.

## Art. 91.—*On a New Mode of performing Tracheotomy.* By Mr. Henry Thompson.

(*Lancet*, March 5, 1853.)

The instrument, and the mode of using it, are thus described by Mr. Thompson:—

The instrument which I have designed, with the assistance of the Messrs. Weiss, who have admirably carried out the intention, and employed in the instances referred to, consists of a broad pair of forceps, (something like ordinary dissecting forceps,) but of which a portion of each extremity, about one inch and a half in length, forms an angle with the handle. The points of them are furnished with a fine cutting edge, and the two blades meet accurately, so as to form, as it were, one blade together. By their means a puncture, or short incision, is made *transversely* through the skin and cellular tissue, and between the first and second rings of the trachea, so that their cartilages are not *cut or injured in any manner.* The blades being left free in the cavity of the trachea, and held there by thel eft hand, a screw placed in the handle is turned gradually, by which means the blades separate, and dilate without lacerating the structures around, until the opening is sufficiently large to permit a tube to be introduced. The screw being then turned back, the forceps may be removed, and the operation is completed.

The method of determining the required spot is simple. Let the patient be placed upon his back, his head lying on the same plane with the rest of the body; so that the neck is neither shortened, nor unduly stretched. The operator should sit or stand behind the patient's head, and with the forefinger of the left hand first find the larynx, then passing the finger downwards over

the cricoid cartilage, the projection of which may be distinctly felt beneath in the fattest subject, he should with it *define clearly* its lower border, so as to be perfectly assured of its situation, and which it is impossible with ordinary care to mistake.

Then holding the instrument in his right hand, so that the long axis of the blades (which are now closely applied to each other) has a vertical direction, they are to be introduced without force, strictly in the middle line, as near as may be, a quarter of an inch below the inferior margin of the cricoid cartilage, so that they may enter *transversely* between the first and second cartilages of the trachea, or thereabouts. Were the instrument to be applied *immediately* below the cricoid cartilage, it would, in most instances, encounter and perforate the first cartilage of the trachea, because, judging from the examination of the parts in several bodies, I find that the cricoid usually overlaps the latter somewhat, although this is not invariably the case. By introducing the point not more than a quarter of an inch lower down, it will readily slip in between the adjacent rings; the screw is then to be gradually turned as directed above. When the patient is restless and unmanageable, the larynx may be steadied by the unemployed fingers and thumb of the left hand, while the head and shoulders are commanded by an assistant.

As regards the tube to be introduced, a full-sized curved tracheal tube, of moderate length, is, I believe, decidedly preferable to the wire tube; at all events at the time of the operation. It is more easily introduced, is less liable to be clogged with mucus, and there is no fear of its collapsing from the pressure of the recently-dilated tissues upon it, which cannot be said of the latter. An additional opening about the centre of the tube itself, in its upper wall, is, perhaps, useful as affording facility for the exit of air by the glottis, and so tending to prevent its function from falling into desuetude.

* * * * * *

In cases which require instant relief, it is presumed that this method will be especially applicable. It is, however, not proposed for adoption in the cases of children. The small size of the trachea, as it appears to me, would contra-indicate its employment, at least until the trachea is laid bare in the usual manner, and even then an opening would, perhaps, be more readily made with the knife. Why should not the operation, however, be performed in the uppermost rings of the trachea in such cases, rather than lower down?

## (B.) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

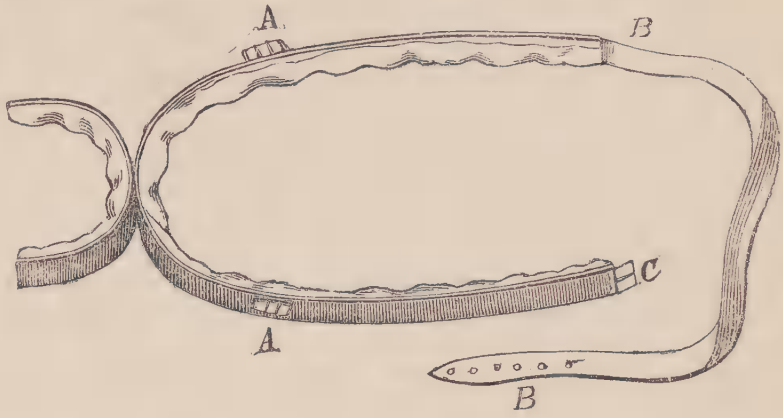
### ART. 92.—*Description of an Instrument for Treating Fracture of the Clavicle.* By Dr. CRAWFORD, of Montreal, Canada.

(*Medical Times and Gazette*, July, 1852.)

The instrument, as delineated, is intended to fix the clavicle by rendering the arm immoveable, and by projecting it outwards more effectually than can be accomplished by the ordinary means. It consists of a sort of double crutch, one part to enclose the chest, the other to receive the arm, which crutch is formed of plates of hammered iron, about two inches broad, rivetted together at the points of contact, and well cushioned on the inside.

The thoracic branches of the apparatus should be from twenty-two to twenty-four inches in length each, so as to pass rather more than half way across the body, to which they are bound by the padded

strap *B*; while the instrument is supported in its place by another cushioned strap passing over the injured shoulder, and buckling at *A*, *A*. This strap will tend also to keep the fractured ends of the bone *in situ*. The semicircle, to admit the arm, may also be provided with strap and buckle, to confine the arm close to the side; while the arm, flexed at the elbow, must be supported by a sling,




*A*, *A*. Two buckles for the attachment of a padded strap, which crosses the injured shoulder, and supports the instrument.

*B*, *B*. A padded strap attached to one extremity of the instrument, to be passed round the opposite side of the body, and fastened to the buckle at C.

which may be formed of a shawl or handkerchief, or, what is better, by a leather arm-sling. To these may be added a strap to be attached to the fore end of the sling, in a loop which takes in both sides of the sling and the hand. This strap, passing over the sound shoulder, and behind the scapula, buckles at the back, or elbow point of the sling, by which means the elbow can be brought forward or elevated, as well as fixed more securely to the body.

### Art. 93.—*Gunshot Wound of the Lungs; Bullet found within the Heart.* By Dr. A. Christison.

(*Edinburgh Monthly Journal of Medical Science*, Dec. 1852.)

The following singular case is taken from an article entitled 'Notes of Observations, at the Field-Hospital of Rangoon, and the Convalescent Hospital at Amherst, during the late military operations in Burmah.' Dr. Christison thinks that the only conceivable way in which the ball could find its way into the ventricle is by one of the pulmonary veins, first into the auricle, and then through the mitral orifice into the ventricle. He regrets that he did not see the whole dissection, and that he had not an opportunity of tracing the course of the ball; but he saw the heart as it lay before it was opened, and felt the bullet at its apex.

A private in the 80th, a stout well-made man, was struck on the 14th April, on the left shoulder by a musket-ball about an inch to the outside of the coracoid process. The course was then downwards and inwards into the thorax. The breathing was at once interfered with, being short and catching, with cough

and bloody sputa; and there was considerable emphysema of the cellular tissue near the wound. He went on very well, though obviously getting thin and pale, and expressed himself as wonderfully easy. The chest in time contracted, while percussion became dull, and the respiratory sound could not be heard, while on the right side the sound became puerile.

On the 5th May he was removed to the depôt at Amherst; there he gradually became thinner and weaker, till he was reduced to a skeleton, at the same time he continued to say he was "very well, considering." The side was now resonant, but there was no respiratory sound. Emphysema reappeared after being absent for several weeks. About the end of June he began to sink, and one evening he suddenly expired.

On dissection, the course of the ball could not be traced among the textures of the shoulder; but between the second and third ribs it passed obliquely through a narrow canal with cartilaginous sides, and then through the costal pleura; a large abscess occupied the cavity of the pleura, except superiorly, where there was air; and the pleura was much thickened. The lung was very much condensed and pressed towards the heart, an opening in its pleural covering showed the continuation of the course of the ball, and this was farther traced as far as the root of the lung, where the examiner failed to trace it further. In the lung was found a piece of red cloth, and another of white cotton, closely appressed. On opening the pericardium, the apex of the heart appeared thickened, and a hard body was distinctly felt at that point. When the cavities were laid open, the musket-ball was found in the left ventricle, lying at the apex, with a thin covering of white lymph partly covering it.

No injury to the heart could be found, nor any evidence of diseased action. The right lung was healthy, as well as the other organs of the body. The heart, as found, was put in spirit, to be sent to Calcutta.

We know of only one case which is parallel to the above, and that is to be found in a pamphlet by Mr. Walter C. Dendy, called 'Wonders displayed by the Human Body,' (p. 36.) This case, which occurred in the practice of Messrs. Davis and Sheward of Upton-on-Severn, is as follows:—

W. Mills, a youth of Boughton, in January 19th, made a gun of the handle of a telescope toasting-fork, with three inches of wood for the butt; he charged the tube with powder, then made a touch-hole, and fired it. The breech was instantly blown off, and entered the thorax between the third and fourth rib on the right side. He immediately walked home, a distance of forty yards. There was very considerable hæmorrhage, and he became faint; a stream of dark blood continuing to ooze from the wound on the slightest motion, yet he was free from pain. For the space of ten days the lad appeared to be recovering from his formidable accident, and once even walked eighty yards, and amused himself in his flower-garden, digging for a short period with his spade. At this time he appeared well, and in a merry and cheerful mood, his eyes being unusually bright. In a few days, however, the boy began to emaciate; frequent rigors and syncope supervened, his pulse being much accelerated. During these paroxysms, however, he complained of no pain, nor was he troubled with cough or abnormal expectoration. He died on 25th of Feb.

On the right side, about half an inch from the sternum, between the cartilages of the third and fourth ribs, there was a small cicatrix. Beneath this, *i. e.*, within the thorax on the pleura, there was a small blue spot; there was no serous or sanguineous effusions in the bag of the pleura, but a small tubercle in the right lung, near the pulmonary artery; in the peri-

cardium there was a quantity of serum. The heart itself appeared healthy. Firmly fixed in the right ventricle was discovered the stick that formed the butt of the gun. One end was forced between the lining membrane of the *columnæ*, the other had ruptured the auriculo-ventricular valve of the right auricle; but no wound was discovered in the heart, the conjecture was, that the stick had traversed the mediastinum, penetrated the posterior lobe of the right lung, entered the vena cava, and been carried by the current of blood into the heart.

## Art. 94.—*A Case in which the Abdominal Aorta was Tied.* By Professor Monteiro, of Rio Janeiro.

(*Rev. Medico-Chirurgicale*, March, 1852.)

This case, which is the fourth of the kind on record, occurred so long ago as November 5th, 1842.

The patient was a man, aged 31, and suffering from what appeared to be aneurism of the right common iliac artery. The symptoms had first declared themselves after a long ride on horseback.

The operation having been agreed to by his colleagues, M. Monteiro made an incision from the left antero-superior spine of the ilium to the tip of the last free rib, in which the superficial fascia, the oblique and the transverse muscles, and the transverse fascia, were successively divided. He then exposed the aorta behind the peritoneum by breaking down the intervening cellular tissue; and the peritoneum and its contents having been raised by the hand of an assistant, he passed the ligature by means of a long needle and tied it in a double knot. After this he closed the wound in the parietes by three twisted sections.

Immediately upon the tying of the ligature the pulsation ceased in the tumour and the inferior extremities became cold, but four hours afterwards the coldness had passed off and the temperature had risen a little beyond the natural point. During the two following days nothing remarkable occurred, and the only point of interest in the report is that the lower limbs were not paralysed. On the 8th there were slight pulsations in the lower part of the tumour and in the femoral ring. On the 9th these pulsations were more marked. On the 12th the wound in the parietes had healed, except at the point occupied by the ligature connected with the aorta. On the 14th about two ounces of red blood escaped by the side of the ligature, the pulse was small and frequent, the skin clammy, and the lower extremities cold. On the 15th there was fresh hæmorrhage by the same channel, together with extreme feebleness, and great pain in the right iliac region. On the 16th the hæmorrhage recurred, with vomiting and hiccup, and the patient died.

The *post-mortem* examination revealed no sign of inflammation in the peritoneum. The aorta had been tied about four lines above its bifurcation, and an inch below the inferior mesenteric branch. Above the ligature the vessel was empty, and the fatal hæmorrhage was found to have issued from an opening in its coats corresponding to the knot of the ligature. The tumour, which was found to be false aneurism, appeared to have originated in a small rupture of the femoral artery about an inch below Poupart's ligament, and from this point the blood had wormed its way into the neighbouring intermuscular cellular tissue of the thigh and upwards, under Poupart's ligament into the iliac fossa, and thence behind the peritoneum to the back of the liver and the under surface of the diaphragm. The right common and external iliacs were red, friable, and seated in the upper and inner side of the tumour.

ART. 95.—*Obstructed large Intestine with a communication between the Bowel and the Bladder: operation for Artificial Anus in the Left Groin, and Recovery.* By Mr. CURLING, Surgeon to the London Hospital.

(*Medical Times and Gazette*, Dec. 18, 1852.)

"The operation for artificial anus in this case was quite successful in rescuing the patient from a speedy death, and prolonging life so as to enable him to return to his distant home; but the profuse discharge attending the disease which produced the obstruction ultimately exhausted the powers of life, and caused death." This case possesses much interest, from the fact that there is only one other case of obstructed bowel on record (according to Mr. Curling) in which ulceration above the stricture had established a communication between the bowel and bladder.

*February 25th*, 1852.—I was requested to see R. S—, chief engineer to a Dublin steamer, aged 38, at a lodging-house in Shadwell, where he had been under the care of Mr. Ross, a surgeon, for several days, on account of an obstruction in the bowels. He stated that he had generally enjoyed good health until about two years ago, when he became subject to constipation and pains in the abdomen. Last October he had an attack of rheumatism in the ankles, which laid him up for a month. Since that period he had suffered more than usual from constipation and attacks of pain in the bowels, and had experienced uneasiness in making water. Six weeks back he had rather a sharp attack of constipation, attended with painful severe spasms in the abdomen, which lasted twenty-four hours, but was relieved by strong aperient medicine. His present illness commenced on Tuesday, the 17th instant, since which he had no satisfactory evacuation from the bowels, and had suffered from severe pains in the abdomen and vomiting. At first he had felt an inclination to go to the closet every half-hour, and supposed that he had a bowel attack, yet nothing passed but watery fluid, which, from circumstances to be mentioned, was probably urine. At the commencement of this attack he had experienced a good deal of pain along the penis, and difficulty in making water; and Mr. Ross, who first saw him on board the steamer, on Friday, the 20th, observed fæculent matter in the urine. Castor oil and croton oil, and also injections, were given without obtaining satisfactory relief. He came on shore in the evening of the 24th, and reached his lodging in an exhausted state. I visited him with Mr. Ross on the 25th, at four p.m., and found him in bed, with an anxious countenance, suffering from pain in the abdomen and hiccough. His stomach rejected food, and his pulse was 120 and weak. His sufferings were somewhat relieved, however, by opium, which he had taken the evening before. The abdomen was greatly distended generally, but not very tender, nor could pain be referred to any particular part. There was a good deal of dark fæculent matter in the urine, which had been passed with considerable pain. On proceeding to examine the rectum, I found an additional source of suffering in inflamed piles. There was no obstruction within reach of the finger, but I could feel some rather dry fæculent matter in the gut. Not having a long tube at hand I recommended a grain of opium, and another injection to be given, and fluid nourishment in spoonfuls, and arranged to see him again at nine p.m., and proposed that Mr. Luke should also be requested to meet us in consultation. We found our patient much in the same state as I have described. Some small masses of fæculent matter, chiefly scybalæ, had

been discharged with the injection. We were unable to pass the long tube further than six inches. The escape of fæculent matter raised a doubt whether the passage was entirely stopped, and it was therefore decided that another injection should be given with the long tube, and that we should wait the result.

26*th.*—I saw R. S— with Mr. Ross at one p.m., Mr. Luke being prevented from meeting us by a previous engagement. The countenance expressed greater anxiety, the abdomen was more tense, and the pulse weaker, and there was distressing hiccough. He had continued to pass fæculent matter in the urine, attended with pain, and a trifling quantity had returned with the injection; but there had been no discharge of flatus per anum. His stomach was able to retain scarcely any nutriment. As the man was evidently worse, and as the passage, if not entirely obstructed, was not sufficiently pervious for the purposes of life, I determined on proposing the operation for artificial anus, to which the patient readily gave his consent. At two p.m., with the assistance of my colleague, Mr. N. Ward, and Mr. Ross, I opened the descending colon in the left loin. The incision was made in the transverse direction, and the gut readily reached at no great depth, the patient being a spare man. The only difficulty experienced in the operation was in deciding whether the portion of gut exposed was small or large intestine, the layer of fascia covering it bearing some resemblance to the peritoneum. I enlarged the incision towards the spine, and, the patient happening to struggle immediately afterwards, the intestine was protruded at the wound so as to expose a longitudinal band, which set all doubts at rest. The gut having been secured to the lips of the wound by two sutures passed with curved needles, the colon was freely opened between them in the longitudinal direction. Three vessels only required to be secured; a good deal of flatus passed immediately. The patient was much exhausted after the operation. I visited him again at ten p.m. A large quantity of fæculent matter had been discharged at the wound, as much, the nurse stated, as a gallon. The abdomen was soft, and the patient had been able to retain wine, beef-tea, and other nutriment on the stomach.

27*th.*—Fæces continued to pass freely from the wound, and the man was rather exhausted, and troubled a good deal with hiccough. A stimulating draught, containing sulphuric ether, aromatic spirits of ammonia and laudanum, was ordered to be given immediately, and repeated if necessary; wine was also given freely.

On the 28*th* I removed the sutures; the wound had a healthy appearance, but the intestine was rather prolapsed.

On the 29*th*, the motions being scanty and of a costive character, so as to cause uneasiness when passing at the wound, he was ordered to take two drachms of castor oil, and in the evening some loose motions passed from the anus, as well as from the wound. The urine was free from any fæculent matter, and passed with very little uneasiness.

*March* 9*th.*—At this period the motions had ceased entirely to pass from the natural outlet and from the bladder, a little wind only escaping occasionally, but very seldom, by the urethra. There was, however, a copious discharge from the anus of slimy pus, mixed at times with small clots of blood, amounting, it was said, to about a pint in the day. The wound was closing up very gradually, but the patient did not recover much strength.

I saw nothing more of the patient, who remained under Mr. Ross's care until May 26th, when, hearing that he was going to return home to Greenock, in Scotland, by rail that night, I paid him a visit. His general appearance was but little changed; he was still weak and emaciated. He stated that he

was able to get up twice in the day for about an hour at a time. There was still a free purulent discharge from the rectum, and occasionally pain in making water. A little fæculent matter had been once or twice observed in the urine, and about eight or ten days previously some had also escaped from the anus. He had a good appetite. The artificial anus in the loin was of good size, and evinced no disposition to close; there was a slight prolapsus of the mucous folds, but which caused no inconvenience. He had obtained a belt with a pad to close the aperture. I received intelligence that he died at Greenock on the 14th of July, having survived the operation nearly five months. No examination of the body was permitted.

## Art. 96.—*On Obstruction of the Bowels.*

By Benjamin Phillips, f.r.s.

(*Lancet*, Feb. 26, 1853.)

The following remarks form the termination of a clinical lecture upon this subject:—

After an extensive experience obtained since the publication of my paper in the *Transactions* of the Medical and Chirurgical Society, I find it necessary to make certain alterations in the suggestions there made; thus, in the seventh suggestion, I would say that I believe the suffering of the patient is much increased, and the fatal termination is much accelerated, by the use of ordinary purgatives, whether introduced by the mouth or the rectum. But I am of opinion that calomel, given often enough to provide most effectually for mercurial action, with opium enough to guard the calomel and to allay spasm, is the most appropriate medical treatment that can be employed. Emollient enemata may be advantageously associated with it, but I doubt whether they can be advantageously used oftener than once in six hours. Supposing there be no satisfactory indication of the seat of the obstruction, this plan of treatment should be continued until the mercurial action is set up in the system. In the eighth suggestion I also see cause for modification. I am now of opinion that surgical operation is not justified unless there be satisfactory evidence as to the point at which the obstruction is situated. If no such evidence is obtained, I am of opinion that an exploratory operation—a voyage of discovery as it were—is not justifiable, and therefore the ninth suggestion must be modified by leaving out the latter portion of the sentence.

The conclusions, then, which the present state of our knowledge seems to warrant are as follows:—

That the occurrence of cases of complete obstruction is by no means unfrequent.

That the causes of obstruction are various, and that in most cases the causes and the seat of obstruction cannot be discovered; but the presumption always favors the idea that it is beyond the cæcum.

That in a considerable majority of cases the termination of the disease is fatal.

That in the treatment of cases of obstruction we should exhibit calomel in large and frequent doses, with or without opium, together with aperient enemata.

That if the symptoms become urgent, the obstruction complete, the fæcal vomiting exhausting, the tympanitic distension distressing, and the vital powers failing, we are justified in having recourse to surgical operation for its relief, provided we can determine upon the seat of obstruction.

Thus, supposing all ordinary means to have failed, and the patient's con-

dition has become desperate, if a surgical operation be decided on, regard must be had to certain rules.

If there be a distinctly marked tumour at any point of the abdomen, whether without or within, provided that be the probable cause of the obstruction, we are justified in cutting down upon the point for the purpose of endeavouring to relieve the patient, either by removing the obstacle or by establishing an artificial anus.

If no tumour can be discovered, nor other symptom can be made available for the discovery of the seat of obstruction, we are not justified in performing an exploratory operation, by opening the abdominal cavity, for the purpose of searching for the obstacle.

If we have satisfactory proof that the cæcum on one side, or the descending colon on the other, are distended, we are justified in opening on the left or right lumbar region, or in the iliac regions, the cæcum, or the descending colon, for the purpose of establishing an artificial anus.

A suggestion for still further availing ourselves of this operation—if not with the probability of cure, at least with the chance of temporary relief—has lately been made by Amussat, in a letter to me. He says—"I have at this moment before me a case of intestinal obliteration, which would have required the establishment of an artificial opening in the lumbar region, if the cancerous affection, which was seated in the rectum, was not so serious or so advanced. The tympanitic distension was so urgent that the patient was threatened with suffocation; I therefore proposed to puncture the distended lumbar colon, to allow of the escape of gas, and thus prolong life. The patient was greatly relieved. The presence of the canula in the wound, however, caused a gaseous infiltration of the cellular tissue: this was caused by the blocking up of the canula from within."

He concludes by saying that the operation may be very useful in cases of intestinal obstruction produced by disease of too serious a character to permit of the establishment of an artificial anus with any prospect of success.

## Art. 97.—*Mechanical Support in Prolapsus Ani.*

By James Deane, Esq., m.r.c.s.

(*Assoc. Med. Journ.*, Jan. 1, 1853.)

It is singular, writes Mr. Deane, that we hear so little of mechanical support in cases of prolapsus ani. Authors will puzzle us with minute and unpractical distinctions about the first element in different cases of hæmorrhoids, and will then forget that, whether it be their cause or not, the prolapsus, so generally accompanying them, will always aggravate them, and even form fresh piles, however carefully an excision may have been effected. Their treatment, also, has been well discussed; but have we been as attentive to their prevention? Have any means been devised for supporting the perinæum during the expulsion of the fæces? What else can remedy the relaxed state of the levatores ani? and, if constantly supported during the evacuation of the rectum, what more reasonable than to suppose that the hæmorrhoids will yield to some mild treatment? or, if requiring removal, that their re-formation will be prevented?

Such was the train of reasoning that occurred to me in the after-treatment of the following case:—

Case.—A. B—, aged 25, had suffered from prolapsus for sixteen years.

During that time, the bowel had descended invariably with each act of defæcation. On examination, I found external piles, large and numerous, and a loose fold of integument completely encircling the anus, and projecting about three eighths of an inch. I found also internal piles, two in number, about half the size of a filbert, and a general abnormal rugosity of the mucous membrane, the nidus of future hæmorrhoids in the present state of parts. She suffered great pain at stool, and the fæces were generally more or less marked with blood. Her general health was very delicate: she had a pale, exsanguined appearance. I removed the external piles by incision, and the loose fold of (skin?) projecting from and encircling the anus. This was, no doubt, originally mucous membrane, which had been protruded, and had taken the form of skin from atmospheric exposure. The wound soon healed, but the prolapsus was as bad as ever, and, if not remedied (the parts being protruded and strangulated for a time daily), would soon have brought on fresh piles, and my patient would soon have receded into her former state.

What was to be done? Here the records of surgery give us no information. I adopted the following plan, with the utmost possible success. My patient has now used it for upwards of two years, and has not during that time had the bowel down, except when accidentally requiring an evacuation when from home. This occasional exception, so certain when the board was not used, distinctly proves that the nonprolapsus, at other times, was due to the contrivance, as truly as the non-descent of the bowel is due to a truss. It is probable that the analogy may go further, and that the *absolute constancy* of this support during defæcation will *cure* prolapsus, just as a truss cures hernia, when used for years without the permission of one descent of the bowel. I may also add, that, since the use of the board, I have heard no more in this case of piles, either internal or external.

The plan may be described thus:—Cover a chamber utensil with a strong flat board, taking a circular form, and projecting one inch; let into the edge of the wood three or four pieces of wood, to keep it fixed on the chamber-pot; make an opening on the surface of the board, a little behind its centre, just large enough for the anus to act; and surround this opening with an elevated ridge, to support the entire perinæum and sides of the anus during evacuation. The anal foramen which I have used, has been oval, its long diameter being antero-posterior, and four inches in length, and its transverse diameter being two inches and a half. It has been abrupt, not bevelled; the sharpness of the edge being removed. The ridge has been half an inch high, and has extended all round the anal foramen, and has been less than half an inch from it. The great object is to keep it within the ischia. Some of my patients have felt more secure and more comfortable *with*, and some *without* this ridge. For females, I have had a large interior urinary fissure, half an inch wide towards the middle of the board, and opening into the foramen, and gradually enlarging forwards to the size of three inches in front. With males, I have recommended another utensil in front.

As 'there is nothing new under the sun,' some such apparatus may possibly have been already used without my knowledge; and I have no doubt that, if the attention of the profession be directed to the subject of this paper, some better plan may be discovered than that which I have suggested.

ART. 98.—*A New Operation for the Extraction of Calculi from the Membranous Portion of the Urethra.* By M. DEMARQUAY.

(*Rév. Medico-Chirurgicale*, Oct. 1852.)

In this operation M. Demarquay proposes to make a semicircular

incision immediately before the anus, which shall pass through the skin, the subcutaneous cellular tissue, and the muscular fibres which pass from the levator ani to the bulb of the urethra,—to separate with the finger the membranous portion of the urethra and the inferior surface of the prostate from the anterior surface of the rectum,—and then to cut into the urethra by a convenient incision, and remove the stone. He thinks that this plan, (which is equally applicable to the evacuation of matter or concretions from the prostate,) is less likely to be followed by fistula or other accident than the operation through the rectum, or by longitudinal incision in the middle line, while it is greatly more convenient than either.

ART. 99.—*The Solution of Urinary Calculi in Dilute Saline Solutions, at the Temperature of the Body, by the Aid of Electricity.* By H. BENCE JONES, M.D., F.R.S., Physician to St. George's Hospital.

(*Proceedings of the Royal Society*, Dec. 1852.)

This paper contained the record of a number of experiments made to determine whether, out of the body, urinary calculi could be dissolved by placing them in dilute solutions of nitrate of potash and other salts, and then decomposing the solution in contact with the calculus by means of the galvanic battery. The urinary calculus was carefully dried and weighed, then fixed between the poles of a galvanic battery, after which it was immersed in a solution of nitre, and at the end of the experiment it was re-dried and re-weighed. The loss of weight gave the effect which was produced. The different calculi which had been used were also exhibited, showing the different degrees in which the various kinds of urinary calculi are dissolved when submitted to this treatment. The conclusions at which the author arrived may be thus stated: In a solution of nitre containing 20 grains to the ounce, kept at the temperature of the body, uric acid calculi can be dissolved by the aid of electricity, at the rate of from 2 to 9 grains an hour. The solution takes place at the alkaline or negative pole. In the same time, and under the same circumstances, phosphatic calculi can be dissolved at the rate of from 2 to 25 grains. The solution takes place at the acid or positive pole. Calculi, consisting of oxalate of lime, proved to be far less soluble, usually not more than half a grain an hour, and at most 2 grains being dissolved. At the conclusion of the reading of the paper, the author stated, that he had been engaged in making further experiments with a solution of nitrate of potash containing only 10 grains to the ounce; and he exhibited some large uric acid and phosphatic calculi, which had been partially dissolved by the decomposition of this solution at the surface of the calculi. He also showed a catheter or litholyte, made by Weiss, which fulfilled the conditions requisite in an instrument for effecting the solution of urinary calculi in the body. It resembled an ordinary lithotrite, but the blades were—1st, isolated so as to conduct the electricity to the surface of the stone when it had been caught; 2dly, the external surfaces of the blades were guarded, so that in case they came in contact with the mucous membrane, no

chemical action would be there set up; 3dly, a double channel for the injection of the solution of nitre was formed inside the instrument. Lastly, the author stated, that although many difficulties would have doubtless to be overcome before he could lay the result of his experiments within the body before the Society, still they would only be mechanical difficulties. The principle, which consisted in setting up mechanical action at the spot where it was wanted, whilst elsewhere a dilute neutral solution was present, left nothing further to be desired; at least so far as the solution of uric and phosphatic calculi was concerned. At present, by the aid of the lithotrite, mechanical force is applied to the surface of the calculus, and the stone is passed in fragments. At some future time, by the aid of the litholyte, chemical force will be set up at the surface of the calculus, and it will be passed in solution, or as an impalpable precipitate.

ART. 100.—*On the Utility of Administering Opium by the Urethra in certain Painful Affections of the Pelvic and Abdominal Viscera.* By Professor RIBERI.

(*'Opere Minori,' Turin*, 1851; *Medico-Chir. Rev.*, Oct. 1352.)

Prior to 1830, the author had published a statement of the great utility derivable from the introduction of opium into the urethra, to alleviate or overcome certain painful or obstinate affections, and especially strangulated hernia, violent colics, and some forms of ischuria. Since that period, the opportunities of a large hospital have furnished him with abundant means of confirming his statements. The dose employed has varied from two grains to six, the effect being the same whether the opium is introduced merely into the urethra or reaches the bladder. Narcotism is much more easily induced in this way in the male than in the female. It has been found very useful in strangulated inguinal hernia, the hernia sometimes returning of itself when the narcotism has been induced, but the aid of the taxis being required in most cases. When the accompanying phlogosis has already led to certain results, such as adhesion, purulent effusion, &c., or where strangulation has supervened upon long-continued irreducible hernia, the operation will still be required; but even in these cases the patients who have been subjected to the narcotism are much less sensible to the pain of the operation, and suffer much less from the subsequent traumatic fever. It is surprising to see in these patients, twenty or thirty minutes after the introduction of the opium, so complete a cessation of pains which had been so violent; the pulse becoming softer, the hernia less tense, and the whole system falling into a state of relaxation as a consequence of the narcotism. In two cases the excessive suffering from nephritic colic, consequent on the passage of calculi, was relieved, after all other means had been tried in vain. In six cases of retention of urine, in four of which catheterism had become impossible, relief was obtained. In two cases of neuralgia of the urethra from onanism, the same result followed the reiterated production of narcotism. In cancer of the uterus it proves a highly useful means of palliating suffering. In

spasmodic colic the method acts like a charm; and even in inflammatory colic it is a powerful adjuvant to antiphlogistic treatment. This mode of introducing opium is also valuable in cases of painful organic disease of the alimentary canal, in which it is obstinately rejected by the mouth. Thus introduced, it does not cause the obstinate constipation or irritation of the digestive organs, nor the excessive narcotism, which large doses, often repeated, are apt to induce when administered by the ordinary modes.

### Art. 101.—*A New Operation for the Cure of Hydrocele.* By Professor Argumosa, of Madrid.

(*Heraldo Medico*, Nov. 4, 1852; and *Rév. Med.-Chir.*, Jan. 1853.)

The plan recommended by Professor Argumosa is to introdue the ends of three or four pieces of small guitar-string into the sac of the tunica vaginalis through the opening made by a small trocar,—to separate them so that they do not all lie together,—and then to dress in the usual manner after the remainder of the fluid is evacuated. The first string is removed in twenty-four hours, and the others at times varying in accordance with the severity of the resulting inflammation, the last being allowed to remain some little time in order to facilitate the discharge of the pus. M. Argumosa's object, apparently, is to provide for the removal of the irritating substance as soon as it has fulfilled its mission, but it is not clear that the means he proposes are either less obnoxious or more efficacious than the means already in use,—for, on his own showing, phlegmonous inflammation around the puncture was not unfrequently set up shortly after the operation. The number of cases in which the operation has been tried is not specified, but the cases are stated to have been numerous and successful.

### Art. 102.—*Air-Compressor of the Testicle.* By Mr. Hutchinson.

(*Medical Times and Gazette*, Feb. 26, 1853.)

In the treatment of the various inflammatory enlargements of the testis it is now generally admitted that few measures are so efficient as the application of pressure. As ordinarily effected, by means of strapping with adhesive plaster, it is, however, liable to several drawbacks. The adaptation of the straps is not easy, and, if awkwardly done, occasions great pain. In order to secure progress, it is necessary very frequently to change the plaster, for the casing ceases to be useful as soon as the enclosed gland has yielded to the compressing force. These removals and reapplications of the dressings occasion great loss of time to the surgeon, and pain and inconvenience to the patient. To obviate these objections, an apparatus has been contrived by Mr. Hutchinson, which consists of a double bag (on the principle of the double nightcap) with the cavity of which a tube communicates. The whole is constructed of air-tight material, and to the end of the tube, which is long and flexible, a small screw-cock is

affixed. The enlarged testicle having been put into the involuted bag, the latter is kept in place by means of a riband tied tightly round the cord. Air is then blown through the tube into the cavity of the bag, and compression of the enclosed gland is effected, just as would be the case with the lung if air were forced into the pleural sac. When filled as full as the patient can comfortably bear, the screw-cock is closed, and the air retained. As soon as by diminution in the size of the testicle the tension has become much lessened, a little more air may, without any necessity for changing the apparatus, be blown in, and thus a condition of constant and equable compression is sustained. With regard to putting on the bag, no more difficulty is found in insulating the affected organ than is the case in applying strapping. The support afforded is very comfortable, and the inflamed part being protected on all sides from friction, blows, &c., by a cushion of air, the patient can walk about, or follow his usual avocations. It must, however, be admitted, that the bulk is considerably greater than that of a merely strapped gland. Its chief disadvantages, as far as it has yet been tried, appear to be, that, from being made of non-permeable material, it entirely confines the cutaneous exhalations of the part, and also that the skin beneath the constricted neck is a little liable to excoriate. For the sake of cleanliness, therefore, the bag should be removed, and the skin washed once a day; if necessary, the latter may be smeared with oil, or protected by a layer of oiled silk. If the case be suitable, a piece of lint, smeared with mercurial ointment, may be wrapped round the testicle, and the bag applied over it. The cases in which Mr. Hutchinson has proposed to use his invention are chronic and sub-acute inflammation of the gland, varicocele, some peculiar forms of hydrocele, after paracentesis, and possibly malignant affections.

ART. 103.—*On Syphilitic Diseases, their Pathology, Diagnosis, and Treatment.* By JOHN C. EGAN, M.D., M.R.I.A.

(London, Churchill, 8vo, pp. 346, 1853.)

Dr. Egan's treatise embodies the results of his very extended experience in syphilitic diseases, and on this account it must be read with interest and profit by all practitioners in this class of disorders, that is by all medical men. The primary and consecutive symptoms are fully entered into; new and original evidence is brought to bear upon the inoculation test; the use of mercury is fully explained; in a word, all the questions of prominence and interest are lucidly and concisely discussed. We select two topics for illustration, the subjoined, and one which will be found in the section devoted to the diseases of women, and we regret that our limited space, and the rule which confines us to novelties, does not admit an ampler reference.

*Upon Mercury in Syphilis.*—The deep-rooted prejudice in favour of the specific powers of mercury, in the treatment of all the varieties of syphilitic diseases, having now (except in the minds of a few individuals whose early predilections counterbalance a more matured experience) been extirpated by an overwhelming mass of well-authenticated evidence arrayed against that

antiquated and unphilosophic doctrine, a writer at the present day is spared the labour of collecting from statistical records materials to form the foundation of an opinion now so universally conceded. The reports of the Army Medical Board, the subsequent united testimony of the surgical staff of the British army, the investigations of Carmichael, Rose, Guthrie, Hennen, Ricord, Bacot, Green, Mayo, together with a host of others, are now so familiar to professional readers, that further allusion to these particular researches would be deemed superfluous.

More recently, however, Dr. Graves has undertaken the laborious task of collating the opinions of German practitioners, including the results of both methods of treatment in the great hospitals of Hamburgh, Berlin, and Vienna. The returns from the hospital at Hamburgh, under the superintendance of Dr. Fricke, were accurately tabulated by his assistant Dr. Günther, and the following facts were elicited. As regards the time occupied in the cure of these affections, under the mercurial and non-mercurial modes of treatment, the precise relative proportion could not be satisfactorily ascertained; but the balance was stated to be in favour of the latter. It was likewise proved that in those patients where mercury had been employed for the cure of the primary sores, nearly one-third were attacked with secondary symptoms. On the other hand, the results of the simple treatment without mercury (which consisted in attention to cleanliness, rest, a restricted diet, and, in plethoric subjects, general blood-letting), are reported to have exceeded Dr. Fricke's most sanguine expectations. A cure was effected in a much shorter period than when mercury had been used; the patients left the hospital with much healthier looks; and when relapses took place, the symptoms were of a much milder description than those which presented in individuals who had been originally subjected to the influence of mercury. When constitutional symptoms supervened, they were speedily cured by a decoction of woods and nitric acid. Caries of the bones was never observed to occur as a complication, where the patient had been treated without mercury; but in cases where a contrary line of practice had been adopted, caries of the nasal, palatine, maxillary, sternal, and tibial bones was frequently met with.

In the Charité hospital at Berlin, where Dr. Struntz treated seventy-four cases of primary disease, all recovered without the use of mercury, and in none did constitutional symptoms follow. A cure under those circumstances was accomplished two, and sometimes even four weeks sooner than when mercury had been employed. Again, in the great hospital at Vienna, all primary affections are treated without mercury; secondary symptoms of a mild form occur in one out of every nineteen cases; the phagedenic varieties of syphilis, either in their primary or secondary forms, are seldom met with; and caries of the bones is a disease quite unknown. Here, however, it will be necessary to observe that a vast proportion of the so-called primary affections alluded to were condylomata—growths which, we have previously seen, are more amenable to local than general treatment. This fact, to the minds of English surgeons, will more satisfactorily account for the rarity of constitutional symptoms, than the deductions drawn by German practitioners founded upon the non-mercurial treatment.

From 1831-4, 5271 patients had been treated in the Strasburg hospital under M. Kayser; for the most part, on the non-mercurial plan. The number of relapses and secondary affections, in which cases only mercury was administered, was very small; in no instance was caries met with.

From the observations of M. Desruelles, made at the Val de Grace, extending over a period of ten years, and instituted upon 8810 patients, he has come to the conclusion that the simple treatment should form the basis of all

rational practice; but should the ulcers exist for the space of twenty or thirty days without showing any disposition to heal, mercury may then be had recourse to in order to effect a cure.

Dr. Roe has drawn up a return of the venereal patients treated in the 38th Regimental Hospital, from the 11th of June, 1836, to the 15th of November, 1837; and out of 231 individuals under his care, of whom 87 had chancres and 36 bubo, there was only one case of secondary syphilis. The treatment was of the simplest description, consisting of rest in the recumbent posture; the free use of purgatives; the application of lint, constantly moistened with a solution of sulphate of copper, to the primary sore; and restriction to a milk diet. The average time required for the cure of the patients under Dr. Roe's charge was a little over fifteen days. No mercury was employed. These results are particularly valuable, as they are attested by Dr. Graves, who had an opportunity of watching the effects of this special line of treatment.

It would be easy to multiply evidence to demonstrate the curability of all the varieties of syphilitic affections without the aid of mercury; but the foregoing references to researches of modern date will, I trust, suffice to establish the authenticity of the fact. To the testimony of others I would only add, that I have fully satisfied my own mind on this subject in the wards of our Lock Hospital.

We, therefore, accord our thanks to those army and continental surgeons, who, by their indefatigable and scientific exertions, have assisted in wresting from the grasp of the charlatan a class of diseases so indigenous to every country, and so prevalent in every climate,—diseases, too, which in their origin and progress recognise no distinction as regards age, sex, or treatment; causing the death of the fœtus while yet in the womb of its mother; exhibiting their characteristic marks in the early months of infantile existence; infusing their poisonous qualities into the blood of the adult, whether male or female; and stereotyping with indelible characters the closing scene of the veteran in debauchery. We perceive that a revolution has been effected, which to an almost incredible extent must redound to the sanatory condition of the nation, and consequently prolong the term of human life. We acknowledge that these are labours worthy of noble, scientific, and philosophic minds. But this is not all. The dogma of Hunter, so long accredited, by which it was laid down as an incontrovertible fact that these affections, if not arrested in their deadly progress by the influence of mercury, proceeded by slow but certain stages from bad to worse, until the life of the worn-out patient was at length forfeited by repeated occasions of the disease, has, by a mass of indubitable evidence, been proved to be a doctrine untenable in its position, and fallacious in its adaptation. In fine, the deductions naturally flowing from these investigations, while they do honour to the unprejudiced spirit in which they were undertaken, are much more important in a practical point of view; as they point to the unnecessary misery and the protracted suffering which the indiscriminate administration of mercury inflicted upon those who were formerly condemned to that unjustifiable routine.

But while I fully appreciate the value of this modern improvement, it is greatly to be feared that, in avoiding the errors of their predecessors, by discarding altogether the use of mercury, many have acted most injudiciously. In speaking in a former part of this treatise, of the treatment best suited to the cure of the primary and secondary affections alluded to under their respective heads, I endeavoured to show that the most common form of primary ulcer which we meet with in this country can, under ordinary circumstances, be more efficaciously managed by topical applications alone; and that, in many of the constitutional sequelæ, mercury may likewise be safely dispensed with

At the same time, I confidently assert that there is a certain class of cases in we should not hesitate in producing a mercurial action, if we aim to promote the best interests of the patient, and are desirous to neutralize or modify the pernicious influence of the poison, and thereby prevent ulterior injury to the system. Thus, for example, while in the treatment of the superficial primary ulcer, together with its usual consecutive results, I do not recognise the anti-syphilitic powers of mercury, (although in iritis, as in other inflammatory affections of the eye, its salutary action is quickly displayed) but, on the contrary, believe that its exhibition is most injurious in giving rise to complications, and exasperating the naturally mild symptoms which are known to succeed to this description of sore; I am fully persuaded that in the treatment of the indurated primary ulcer, as also in the train of symptoms which usually follow upon that most poisonous sore, its use is not only beneficial in promoting a cure of the varieties of this form of disease, but absolutely indispensable to the final safety of the patient. But here the judgment of the practitioner will be required, in deciding upon the most favorable time for its exhibition, and deferring its administration until the disappearance, in the primary ulcer, of all local inflammatory symptoms. In the secondary eruptions, a like caution should be observed during the febrile excitement which sometimes accompanies the cutaneous affection in the early stages of its development. Looking upon ptyalism as the surest test of the beneficial action of mercury in the adult, experience has likewise taught me that no advantage is to be derived from too sudden or excessive salivation. The curative action of mercury in the former instance cannot be depended upon; and in the latter condition its salutary operations are at least suspended, until the more acute symptoms of stomatitis, together with the fever with which it is associated, are subdued by treatment or wear off in time.* In addition, the patient's strength, by the supervention of those untoward manifestations, is considerably reduced; his convalescence is materially retarded; and should mercury be again indicated for subsequent relapses, much difficulty will be experienced in exciting its healthy action, in consequence of its previous mal-administration. The iodide of mercury will, in many instances where the primary and secondary disease coexist, be found superior to any other preparation; and the mercurial vapour bath will form a valuable adjuvant in certain constitutional affections, and in the latter stages of eruptive diseases, where the desquamating stage has been unusually protracted.

In the primary and secondary forms of phagedena, mercury, as a general rule, will be found to act most injuriously, by promoting the ulcerative process, and causing rapid destruction of the tissues in which the disease is seated. Thus, we shall find that under its use the primary sore will speedily extend its original limits, involving in its ravages the adjacent sound structures; and by constant hæmorrhage from the opening of contiguous vessels, the life of the sufferer will be placed in imminent danger. The ulceration of the throat, instead of being controlled by its influence, will spread with frightful rapidity, engaging in its unrestricted progress parts eminently essential to the vital functions. The rupial eruptive disease will evince the same morbid disposition; and if mercury be still persevered in, the life of the unfortunate patient will finally be victimized to the poisonous effects of the mineral.

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* Dr. Christison, in his admirable work upon Poisons, mentions a case which came under his notice, where gangrenous inflammation of the throat and fauces was produced by excessive salivation. A nearly similar case came under my care some time since. Both terminated fatally.

*Upon Sarsaparilla in Syphilis.*—I have already stated it as my firm belief, that the fluid preparations of sarsaparilla possess no innate virtue when administered in any of the forms of syphilitic diseases; and when prescribed as the vehicle for the exhibition of the iodide of potassium, contribute no additional efficacy to the curative powers of that particular remedy. I therefore conceive these drugs might with propriety be discarded as medicinal agents, from the special formula of the practitioner; more particularly when we consider the expense which their use entails upon hospitals and public charities.

## Art. 104.—*Iodide of Sodium in the treatment of Constitutional Syphilis.* By Dr. Davieri, of Bologna.

(*Corr. Sci. de Roma*, No. 32, 1852; and *Chemist*, Dec. 1852.)

*Résumé.*—1. Soda being a very common ingredient in our organism, the iodide of its base appears best suited to the human system.

2. The taste of the iodide of sodium is much less disagreeable than that of the iodide of potassium.

3. It is less likely to occasion iodism.

4. It is better borne than the potassium salt, and in consequence of this, its dose can be almost daily increased, and it thus becomes a more efficient remedy.

5. It has sometimes succeeded where the iodide of potassium had failed.

6. We may commence by giving daily, in three equal doses, a scruple of the salt dissolved in three ounces of distilled water, increasing the strength of the solution, every two or three days, by six grains. Some patients have, in this way been able to take more than two drachms a day, without suffering the slightest inconvenience.

7. The iodide of sodium is admirably adapted to cases in which the corresponding salt of potassium is indicated.

8. The iodide of sodium is the best substitute for mercury.

## Art. 105.—*On a New way of treating Gonorrhœa.* By Mr. John C. Milton.

(London, Churchill, 8vo, pp. 103, 1852.)

In the treatment of gonorrhœa Mr. Milton recommends, first of all, if the case be seen before inflammation has set in, the abortive plan of treatment; that is, a strong injection of nitrate of silver, with purging, low diet, and rest. If this plan fail, or if the case be not seen at its commencement, he has recourse to his "new way," which consists in, "internally, salts of potash and rhubarb, hot water externally, with injections combined and graduated." The saline solution "is formed by pouring 5 oz. of boiling water on 2 drachms of powdered chlorate of potash, and then adding 3 drachms of liquor potassæ, and 3 to 5 drachms of the acetate (this he calls 'liquor potassæ compositus'). In order to obtain its full effects it must be combined with rhubarb, from 5 grains to a scruple." The hot water is to be applied so as to produce *faintness and excoriation.* The injections are those in general use, that of nitrate of silver being considered of highest value, and

that of sulphate of zinc next in order, the first being used by the surgeon, and the last by the patient. If these means fail, the case becomes one of gleet, and then one of the means to be employed is to envelope the penis in a blister.

Mr. Milton enters fully into these and other topics connected with his subject, and some that are not connected, and his remarks in many instances possess considerable value; but the melancholy truth is not to be disguised, that the new way is not infallible.

### Art. 106.—*On the Treatment of Gonorrhœa by Copahine-Mège Capsules.* By M. Jozeau.

(*Lancet*, Nov. 6, 1852.)

The following is the account given by M. Jozeau of the preparation of the Copahine-Mège, and the pathological facts which led to the peculiar manner of preparing this remedial agent:—

It was noticed that such patients as were purged by the copaiba evacuated per anum large quantities of this drug in an unaltered state, their urine not containing any of it. These persons, though sometimes cured, generally had a relapse. Those, however, who were not purged became well more slowly, and had no recurrence of the disease; their stools contained no copaiba, and their urine a great deal. From these facts it became evident that in order to obtain regular and speedy effects, the copaiba should be made to undergo such modifications as to insure its more complete absorption into the system. Experiments were now instituted respecting the effects of the two principal substances contained in the copaiba—viz., the oil and the resin. These were separately tried. The oil produced a decidedly purgative effect; the resin purged less; but no complete cure was obtained by either substance taken separately.

It was now pretty clear that both the resin and essential oil were indispensable for obtaining curative effects, and the question arose how these could be modified so as to allow the stomach to digest them completely. This end was attained in surcharging the copaiba with oxygen, by means of nitric acid, the latter being added in proportions which varied according to the kind of copaiba acted upon. The nitric acid yields some of its oxygen to the essential oil, and the nitrogen is given off in the form of hyponitrous acid, by combining with the oxygen of the atmosphere. The copaiba thus treated is then well washed with water, until it no longer reddens litmus paper, and to it are added one tenth part of cubebs in fine powder, the same proportion of carbonate of soda, and one sixteenth part of calcined magnesia. The mixture is allowed to stand until it is quite solidified, and in that state it is made into small masses. The latter are then carefully covered with sugar, to which a pleasant pink colour (coccus cacti) is given, and they then look like very pretty sugar-plums.

To these saccharated capsules the name of Copahine-Mège was given, because the experiments had been made conjointly by M. Jozeau and M. Mège, and the latter had first thought of making the saccharated capsules. For lymphatic patients and delicate females a second mass was prepared, into which, besides the above-mentioned ingredients, some steel was made to enter. This is then a sort of martial preparation of copaiba. The doses are stated as follows:—

When there is neither pain nor inflammation, five saccharated capsules are

taken three times per diem. One capsule more is then given with each dose every subsequent day, the doses being thus increased until purging is produced. Where there is pain or inflammation, these should first be treated by the surgeon in the manner he thinks the most advisable, and the copahine is to be commenced when acute symptoms have abated. It has been noticed that the martial capsules have effected a cure when the simple preparation has failed.

These capsules have been tried by Mr. Lloyd, Mr. Poland, and Mr. Le Gros Clark in hospital practice, and by Mr. Gay, Mr. Callaway, and others, in private practice, with tolerably satisfactory results. The gonorrhœa was cured or stayed in varying periods, without the inconvenience of nausea or sickness.

## (c.) CONCERNING THE UPPER EXTREMITY.

### ART. 107.—*American Statistics of Amputation of the Shoulder-Joint.* By STEPHEN SMITH, M.D.

(*New York Journal of Medicine*, Jan. 1858.)

The following is the result of American experience upon this subject:

Whole number of operations 39, of which 13 were fatal and 1 doubtful; being a mortality of upwards of 33 per cent. Of the fatal cases 7 occurred in the New-York Hospital, being a mortality of all the cases occurring in that institution of upwards of 53 per cent, the remaining fatal cases give a mortality of 24 per cent. In 10 of the fatal cases the cause was traumatic, and of these the operation was secondry 6 times; primary 3 times; not given, 1. Of those cured, the cause was traumatic in 13 cases, and of these 4 were primary amputations; 1 secondary; 8 not given. In 7 cases anæsthetics were used, of which one was fatal. No further summary can be made which would be useful.

### ART. 108.—*Backward Luxation of the Ulna alone.* By Professor RIBERI.

("*Opere Minori*," *Turin*, 1851; *Med.-Chir. Rev.*, Oct. 1852.)

This species of dislocation, first described by Sir A. Cooper, and since by Sédillot and others, is produced by a fall on the palm, and if not recognised, is followed by impaired use of the forearm. The principal signs are, (1) Severe pain, due to the irritation of the ulnar nerve, and associated with numbness of the last two fingers; (2) flexion of the forearm; (3) impossibility of movement in the elbow-joint, while supination and pronation still continue; (4) shortening of the inner side of the forearm, and abduction of the hand; (5) deviation inwards of the forearm on the axis of the humerus; (6) increase of the antero-posterior diameter, and of the circumference of the joint; (7) osseous tumour at the bend of the arm formed by the inner condyle; (8) projection of the olecranon posteriorly, less, however, than in the dislocation of both bones, and much less in children, in whom the olecranon is

naturally less projecting, which may lead to error in diagnosis; (9) the radio-humeral articulation usually uninjured.

Dr. Riberi has had many occasions to treat this dislocation, which occurs more frequently than is usually believed. Fortunately it can be reduced long after its production, for commonly it is accompanied at once with so much swelling, as to render its detection often impossible until many days after, when this has subsided. The author has reduced it six months after its occurrence. Three cases that recently occurred in the hospital are related, all of which arose from the cause, and exhibited the symptoms, already stated; and all were readily reduced (one case having occurred forty-two days before) by the same means, the return of the bone being attended by a noise audible to all, and followed by immediate recovery of the movements of the joint. Two assistants made extension and counter-extension, while the surgeon kept his left hand on the internal condyle and olecranon. As soon as the condyle and ulna were brought, by means of the extension, to the natural plane of the joint, he, still pressing the olecranon downwards, grasping the forearm at its lower end, gradually bent it upon the arm. In this way the reduction is aided by the action of the brachialis, and by the radius, which, brought during the flexion of the forearm against the external condyle, thrusts the humerus backwards.

ART. 109.—*Amputation at the Hip-Joint for Malignant Disease of the Femur.* By Mr. C. G. GUTHRIE, Surgeon to the Westminster Hospital.

(*Lancet*, April 21, 1853.)

Commenting upon this case after the operation, Mr. Guthrie said that he had amputated the limb after what might be called Mr. Brownrigg's method. He said, also, that he had been induced to remove the limb at the hip-joint because the disease (osteo-sarcoma) had returned in the shaft of the femur, and caused death, in another patient, on whom he had performed amputation of the thigh close to the trochanters about three years ago, and because such a catastrophe was a common result. The following particulars are from the "Mirror" of the 'Lancet:'

Wm. P—, aged 50, a well-formed man of high stature, and following the occupation of gardener, was admitted, April 14, 1853. It appears that the patient began to perceive a swelling of his right thigh eight years before admission; the tumour gradually increased, but gave him but little annoyance until a twelvemonth before he was received into the hospital. The pain was now very severe, the tumour took a more rapid development, and the man's health began to fail. As the disease had begun in the lower third of the femur, the movements of the knee became soon very much embarrassed, and flexion could no longer be performed when the patient was admitted. The tumour had finally included the two lower thirds of the thigh, and doubled the size of the limb.

The patient was so placed that the ischia were a little beyond the margin of the table; and the sound leg (left) having been as widely separated from the affected limb as practicable, Mr. C. Guthrie placed himself on the man's

right side, and prepared to use a knife, made for the purpose, about fifteen inches long and two inches wide at the handle. This knife was introduced horizontally from without inwards, a little above the great trochanter, and the point made to emerge close to the scrotum, which was carefully held aside. By cutting horizontally along the anterior margin of the bone and then upwards for about four inches, the knife was liberated, and the anterior flap formed. The latter was immediately raised by the assistants, and presented a rather unusual appearance, both from its size and the naturally considerable gush of blood which took place both from the flap itself and the lower traumatic surface. Mr. Guthrie now divided the capsular ligament, and run the point of his knife between the head of the bone and the cotyloid cavity, so as to divide the round ligament.

The limb at this time should have been strongly rotated outwards, but this could only be imperfectly done, as the rigid knee and the rather low table prevented the assistants from accomplishing their purpose. When the knife had separated the rotator muscles, the handle was close to the scrotum; and without changing its position, Mr. Guthrie made it glide along the posterior portion of the bone for about three inches and a half, and by cutting downwards made the posterior flap, thus completely separating in less than two minutes such a considerable portion of the patient's frame.

The assistants immediately covered the bleeding surfaces with sponges, and now began the very important business of securing the vessels. This was done first for the upper flap, whilst the lower was being compressed, and the hæmorrhage became more and more feeble as the ligatures were successively and carefully placed on the arteries. The vessels of the lower flap were now secured in the same manner and with great rapidity, so as to render the loss of blood as inconsiderable as possible; and the two huge flaps soon presented an extensive, unequal, deep red, muscular surface, from which a little venous oozing was going on.

The patient became at this stage rather faint and pale, but a little cold water to the forehead was sufficient to restore him. The flaps were now approximated, and their margins kept in contact by sutures, strips of adhesive plaster, and appropriate dressings. The patient's bed was brought into the theatre; he was gently placed on it, and seemed on opening his eyes to have retained a comparatively large amount of animation.

The patient remained very quiet and comfortable for the remainder of the day, and spent a comparatively good night, sleeping for a couple of hours at a time. The next morning was not marked by any untoward symptoms, the patient took sustenance, and was not complaining of any pain, when at two o'clock in the afternoon a gush of blood was noticed to take place from the dressings. Assistance was immediately procured, the dressings were taken off, but the hæmorrhage had ceased, and when Mr. C. Guthrie arrived, no trace of bleeding was observed. A large and clean piece of lint was placed under the stump, so that the least amount of hæmorrhage could be perceived, but it had completely stopped. It was not thought advisable to remove the sutures and separate the flaps, as it was apprehended that the shock might act very unfavorably upon the patient. But the latter was becoming more and more weak, and in spite of ammonia, brandy, &c., he died at five o'clock. A post-mortem was made on the following day, when all the viscera were found completely healthy, though in a very exsanguineous state. The stump contained a quantity of coagula which might have filled a large tumbler, and when these were removed, the vessel from which the hæmorrhage had proceeded was looked for. No open mouth could be distinguished; but after water had been forced into the external iliac artery, the fluid was seen to come

out from a vessel which was judged to be a branch of the circumflex artery. It is very probable that the hæmorrhage from this vessel had stopped when the patient became faint, but that enough blood had been lost, as proved by the coagula, to lead to a fatal issue.

### (D.) CONCERNING THE INFERIOR EXTREMITY.

ART. 110.—*A Case of Excision of the Head of the Femur.* By Dr. BUCHANAN, Professor of Anatomy in the Andersonian University, and formerly Senior Surgeon to the Royal Infirmary, Glasgow.

(*Glasgow Medical Journal*, April, 1853.)

The subjoined case, which was successful so far as the operation goes, differs from other recorded cases of the same kind,—in the comparative soundness of the capsular ligament, there being only a small opening inferiorly through which the pus escaped,—in the non-disarticulation of the head of the femur from its socket,—in the partial removal only of the diseased acetabulum,—and in the age of the patient, namely 41 years.

CASE.—James Downie, aged 41, an Irish plasterer, was admitted into the Royal Infirmary, 2d November, 1850. Is unmarried, hair of a sandy-red colour, skin fair, eyes light blue, countenance intelligent, height about five feet ten inches, habits temperate. Was in the enjoyment of robust health till about two years ago, when without any assignable cause, he experienced a gnawing pain in right groin, and observed, at the same time, two or three of the glands in that part enlarged to about the size of an almond. He remained in this state for three or four months, when the pain shifted from the groin to the region of the acetabulum on that side, was of the same gnawing character, more severe during the night, and greatly aggravated by motion, or resting the weight of the body on the affected limb. Soon after, the pain extended down the thigh to the inner part of the knee joint. In September, 1849, he became totally incapacitated for his wonted employment, being unable to walk without the assistance of a stick. From that period, till admission into the surgical wards of the hospital, he had been under the care of several intelligent surgeons, by whose advice he was repeatedly cupped, blistered, and cauterized over the affected hip-joint, and had calomel and opium till ptyalism was induced; as also some other medicines, the nature of which cannot be ascertained.

Notwithstanding all this, no relief was obtained; the symptoms rather increased in severity, and on coming under the charge on the 2d of November, 1850, the appearances and symptoms were as follows:—Patient cannot walk without the aid of crutches, and while in the recumbent posture is obliged to lie on his back, being unable to rest on either side. The right leg is semiflexed on the thigh, and does not admit of extension, apparently from contraction of the hamstring muscles, induced in consequence of the limb having been long kept in that position, as the one in which he lay with greatest ease. The knee-joint appears to be unaffected. There exists considerable fulness around the right hip-joint, over the trochanter major, and down the thigh for about four inches. In this swelling fluctuation is distinctly perceptible. Over the whole gluteal region of the affected side there is felt a constant pain, greatly aggravated by the slightest motion of the limb, or on impinging the

head of the bone against the acetabulum. He also complains much of pain in the inner side of the knee. Pulse 110, feeble. Tongue dry and foul. Great thirst. Bowels regular.

An incision was made into the lower portion of tumour, through which was evacuated a large quantity of sero-purulent fluid mixed with flakes of coagulated lymph. Head of thigh bone found to be in its normal position. Fomentations were applied. *Full diet. To have six ounces of wine.*

*November* 26*th.*—Abscess daily discharges a large quantity of pus, now of healthy appearance. Appetite much improved. Thirst continues. On pressing the head of the bone against the acetabulum crepitation is distinctly perceptible. Continue the wine, and let him have four ounces of whisky daily.

*December* 12*th.*—To-day while patient was under the influence of chloroform the opening in communication with abscess was enlarged, and a careful examination made with finger and probe, when no opening into the joint could be detected, but pressure over trochanter still elicits a gritty feel, seemingly in seat of acetabulum. Discharge profuse. Has a tendency to diarrhœa. Sleeps little during the night. *Omit whisky. Eight ounces of wine daily. Two grains of opium every night.*

20*th.*—The tendency to diarrhœa, which subsided since last report, has again returned. Has profuse perspiration morning and evening. Pulse more feeble. Appetite completely gone. *Wine increased to twelve ounces daily. Two grains of opium three times a-day. One grain of sulphate of quinine, and ten minims of aromatic sulphuric acid, morning and evening.*

22*d.*—Yesterday vomited wine. Perspiration more profuse. Discharge from hip increased. Diarrhœa also increased. Countenance anxious. Body much emaciated. Pain constant and very intense both in hip and knee-joints, especially in latter. Pulse 130, very feeble. *Continue wine and quinine. Two grains of opium every sixth hour.*

A consultation of the medical officers of the hospital was held, and after careful examination of the case, failing to detect symptoms of other disease, it was recommended that the operation of excision of the head of the femur should be performed, as the only means by which life could be prolonged. The nature and extreme danger of the operation having been explained to the patient, he urgently requested its immediate performance, saying he would take his chance, small as it was, rather than endure any longer the excruciating agony he had been constantly suffering for some months back.

23*d.*—To-day I performed the operation in the following manner:—Patient was first brought under the influence of chlorofrom at his own urgent request, and having been placed on the table on his left side, an incision to the extent of six inches was made, perpendicularly over the dorsum of the ilium, in continuation with that previously made below trochanter major, through gluteus medius and minimus. A transverse one forming the letter "T" was then made, extending from anterior edge of pyriformis muscle to a line drawn from anterior superior spine of the ilium downwards. On exposing the joint the capsular ligament was found entire, with the exception of a small portion of its inferior border, which was perforated by ulceration. The capsule being incised, the head of the bone was with care disarticulated, and made to project out of the wound by crossing the leg over its fellow. The head of the bone was found completely denuded of cartilage, and, along with the greater part of the neck, in a carious state. The section was made at the root of the great trochanter by means of a common saw, and the diseased bone removed. The apex of trochanter major, being found in a carious condition, was also removed by the cutting pliers. Shaft of femur

below trochanter was sound. Acetabulum was completely denuded of cartilage and rough, cotyloid and round ligaments gone, ulceration having extended to the above parts. The edge of the cavity, which was carious, was removed by the forceps. No vessels requiring ligature, the lips of the wound were approximated at once by means of stitches and adhesive plaster, over which was applied the usual dressing supported by a bandage. The operation was completed in a quarter of an hour. About three ounces of blood were lost, and at no time did the pulse flag, although patient was perfectly unconscious during its performance.

9 *o'Clock p.m.*—Has slept a little, and expresses himself as easier than he was prior to the operation. Is lying a little to the left side with right limb still flexed and resting on the other, as the only position he can maintain with any ease. Pulse 120. *Continue medicine formerly prescribed.*

24*th.*—Has slept at intervals during the night. Profuse perspiration somewhat abated. Takes his wine with more relish. On removing the dressings, flaps appear in close opposition. Little discharge. No swelling of the surrounding parts. Has had one stool this morning. Feels easy.

25*th.*—Progresses favorably. Slept well last night. Perspiration much diminished. No return of the diarrhœa since the operation. Pulse 100, firmer. Appetite improved.

26*th.*—Has had little sleep during the night from general restlessness. Little pain in wound, discharge from which is small; edges of incision partly cicatrized. In consequence of position of limb, trochanter major presses upwards and outwards against anterior flap, but no ulceration has yet taken place. Pulse 96, of good strength. Tongue clean. One stool since yesterday. Seems to dislike the wine, of which he has taken none to-day. *Omit the wine. To have six ounces of brandy.*

29*th.*—The stitches were to-day removed. Wound cicatrizes rapidly. Discharge diminished, and more healthy. Sleeps well. Pulse 84, of good strength. Perspiration greatly diminished. Bowels regular. Tongue clean. Appetite much better. Says he feels no pain in the seat of former disease, and except at time of dressing, or in attempting to move the limb, is quite easy. *Omit brandy and quinine. Six ounces of wine daily. Two grains of opium three times a-day.*

31*st.*—Continues to improve daily. With the exception of a small opening, where perpendicular incision meets transverse, immediately below trochanter major, wound has united, and healed kindly underneath. The posterior edge of trochanter major is slightly projecting through the lower opening already alluded to, and feels rough, but on introducing the probe, the bone is found to be sound underneath. Pulse firmer. *Two grains of opium at bedtime only. Continue wine.*

*January* 2*d*, 1851.—Yesterday, towards evening, bowels became relaxed, and during the night he had four loose stools, but by the administration of four grains of powdered opium in a starch injection, the diarrhœa was checked. He had taken during the day a larger quantity of soup than usual. In other respects general health improves. Has taken a beef-steak to-day instead of soup, with relish. Projecting portion of troch anternearly covered with healthy granulations. Probe introduced into opening in wound communicating with acetabulum, discovers surrounding parts in a healthy state, and only about the size of a shilling of inferior edge of cotyloid cavity is felt rough.

11*th.*—Has continued to improve since last report. Acetabulum covered now with healthy granulations, with the exception of a small portion about half an inch in circumference, which the probe proves to be rough.

Trochanter major also covered completely with healthy granulations, over which cicatrization advances rapidly. Can now turn himself with ease round upon his back, from his left side, without experiencing the least pain.

21*st*.—Discharge being so small, wound has been dressed only every second day since last report. Opening in communication with cotyloid cavity, and through which the pus escapes, is now so small as hardly to admit the passage of a quill; and probe introduced into this fails to detect any carious bone, healthy granulations having filled up whole of acetabulum and surrounding parts. Superficial ulceration over seat of incision and trochanter major almost completely cicatrized. General health rapidly improves. Appetite good. On examination of knee-joint, flexion and extension can be performed without pain, but on continuing extension, hamstring muscles resist, and prevent the limb from being straightened.

24*th*.—These last three days appetite has rather failed. Sleep also not so sound. Is troubled with acid eructations, which last symptom was removed yesterday by the administration of one drachm of Gregory's mixture. In every other respect has continued to improve. Ulceration over seat of former incisions completely cicatrized, the opening already mentioned, now about the size of a crow quill, alone existing. From this a small quantity of healthy pus is daily discharged. Motion of femur on os innominatum can be accomplished to a considerable extent without pain. The whole cavity of the acetabulum is found to be filled up with osseous plasma, and healthy granulations. Pressure on dorsum ilii and all around spot where disease existed causes no uneasiness. Patient is averse to any attempt being made to straighten his limb until his strength is further recruited. In consequence of his long confinement to the hospital, the wards of which have been of late much crowded, his general health has suffered slightly. At his own request, accordingly, I procured for him a lodging in the country, to which he was removed to-day by railway, and he stood the journey very well.

After this time I visited him weekly, and found him progressing as favorably as could be desired, acquiring new strength, his appetite good, and in every respect feeling comfortable, and in good health. About two months after leaving for the country, he was seized with an attack of dysentery, having in the interval enjoyed great ease and freedom from pain. This affection acting on a constitution already weakened by protracted suffering, speedily reduced him, and in the course of two or three days he died.

I was unable to be present at the inspection, but the affected parts were transmitted to me for examination. The wound was almost entirely healed up, a small opening admitting a probe alone remaining open. The whole course of the incision underneath was completely consolidated. The cut surfaces of the neck of the femur and great trochanter were quite sound, being coated with a cartilaginous incrustation. The circumference of the acetabulum, from which the edges had been removed, was studded with spicula of new bone, showing the progress which nature had already made towards a cure. The acetabulum was filled up with granulations, but in some points was still rough, the reparative process having not yet extended over the whole seat of disease. At the upper part of the cavity there was a small isolated piece of rough and porous bone, loose, and evidently in the course of being discharged, piece by piece. Around this the bone was rough, but not spongy, while other parts were solid and smooth.

ART. 111.—*Successful Case of Excision of the Head of the Femur, in an Adult.* By G. M. JONES, ESQ., Surgeon to the Jersey Hospital.

(*Medical Times and Gazette*, Nov. 13, 1852.)

The graphic details of this case give an excellent and vivid idea of the dangers and difficulties of an operation, the merits of which are still *sub judice*. The risk was very great, but the issue was completely successful.

Jane Burton, aged 32, unmarried, dark hair and eyes, of middle stature, and inclined to be stout, was admitted into the hospital on the 27th February, 1850, in consequence of an affection of the left hip. She then gave the folfollowing history of her case:—In May, 1833, she resided at Bodmin, and, while walking, struck her foot against a stone, and fell with considerable violence on her left side. She however managed, by hopping, and the assistance of a friend, to reach home. In a few hours the hip became swollen, and, though she could move it, the doing so caused considerable uneasiness. She lay up for a week, after which she was able to walk, though still lame, and from that period she daily experienced pain in or about the joint. For an entire year no remedies of any kind were resorted to; but after this time the pain became so severe, that she was twice placed under treatment, and leeches, poultices, and various kinds of liniments were applied, but with little advantage; for, on her coming to this island twelve years ago, she was unable to walk without the assistance of crutches. After her arrival here, various remedies, mostly topical, were employed, and, as is often the case in affections of this nature, many were consulted, from the qualified surgeon to the veriest quack. Ten years since an abscess formed about four inches below the trochanter, the discharge from which was at times copious, while at others it apparently healed, but only to break out again with increased discharge. Seven years ago the limb became shortened, and the foot in some degree everted, so as to necessitate a moderately high-heeled shoe. From the time of her admission into the hospital until the excision took place, many remedies, both local and constitutional, were employed, of which the enumeration would be useless: suffice it to say, they were such as are generally had recourse to in affections of this nature. The catamenia, which first appeared when she was 25, had till within the last six months been regular. At times there appeared an amelioration of symptoms; and, on one occasion, I for a short time entertained the hope that a free incision of considerable length, commencing about two and a half inches below the trochanter, and extending down the shaft of the femur, might prove of signal benefit. In making this incision, I had in view both the laying open the largest sinus which existed, and which I had every reason to believe had some connection with the head of the femur, though it was impossible, by means of a probe, to detect bone, and also to afford as free an outlet as possible to any exfoliating or exfoliated bone, should such exist. The incision thus made was kept open by means of pledgets of lint, and allowed to heal up from the bottom. This attempt at one time appeared likely to succeed, but the promise was of short duration. Soon fresh abscesses formed, and again sinuses could be detected burrowing in various directions. The discharge, for some time anterior to this, had appeared of a peculiar character, more like chalk and water than anything else, and the least pressure caused it to flow in great quantities. Upwards of a month before the excision, constitutional symptoms of a much more formidable character than I had as yet witnessed set in. Anodynes, which formerly

produced ease, if not rest, seemed to have entirely lost their efficacy; the appetite almost altogether failed, and the little food taken generally produced nausea, and not unfrequently vomiting; the tongue was thickly coated with a brown fur, the pulse rapid, and it was evident that the degree of disturbance the constitution was labouring under must inevitably soon occasion death. From these circumstances, it became clear that the choice must be made between continuing the treatment which had been hitherto employed, and which had altogether proved that no natural or remedial measures were of the least avail, and an attempt to remove the cause of an irritation which was rapidly undermining the very existence of the patient. The latter was chosen in consultation, and excision of the head of the femur decided on.

The position of the limb, when the operation was performed, remained the same as it had been for some months; the nates were neither wasted nor flattened, nor could I learn, from the somewhat imperfect account she gave of her case, that this appearance had ever existed; on the contrary, although the position of the limb, which was considerably inverted, one third semi-bent, much shorter than is natural, and the toes resting on the metacarpal bones of the other foot, plainly showed that the head of the bone was not in its normal place. It was impossible to discover, by manipulation, its precise situation, in consequence of the great fulness and fleshy condition of the thigh and its neighbouring parts, and perhaps from some degree of unwillingness on my part, and that of my friends, to increase her sufferings by pursuing further an apparently useless examination. At no period had she complained of pain in the knee,—a symptom which, in the great majority of cases, is so characteristic of hip-disease; she invariably referred it to the joint, but more particularly to the upper part of the shaft of the femur. The slightest motion of the limb caused excruciating pain, and an attempt to press the hip upwards could scarcely be borne. Added to this, there was a large open and unhealthy oval sore, (full five inches in length, and upwards of three in its widest diameter, and which included the openings into the different sinuses,) commencing below the trochanter, and which was evidently rapidly spreading; a quantity of thin discharge was constantly flowing from it.

Operation was performed on the 19th February. The patient was with some difficulty placed under the influence of chloroform, and was then laid on her right side for the purpose of elevating the hip. A semi-lunar incision, full eight inches in length, and which in a great measure ran across the middle of the open sore, was then made: it commenced at the shaft of the femur, and terminated over the head of the trochanter. The depth of integuments cut through before the scalpel reached the bone was very considerable, and their indurated state plainly foretold that the operation would prove a tedious one. In order, however, to facilitate it as much as possible, the ulcerated parts, which were found to be much deeper and more disorganised than even the wretched external appearance had predicted, and which it was evident would slough, were at once removed, so as to leave both edges of the wound as free from disease as possible. (During this part of the operation, a quantity of ill-conditioned pus flowed from different parts.) It now became evident that the head of the bone rested on the dorsum ilii; it was impossible to pass the fingers round it: enough, however, could be felt to prove that it was denuded of cartilage, and in a state of caries. The whole of the upper part of the femur was so imbedded in a net-work of integuments, of almost tendinous structure, that the carrying the limb across the other, (although much dissection had already taken place about the neck and trochanter,) failed to thrust out the upper end of the bone.

Further interference with this part of the operation was, therefore, given

up; the shaft of the femur was now sawn through, then gradually raised, while its under part was dissected upwards. Much more difficulty than I can describe was now experienced in freeing the head; for, although the sawn portion was literally thrown back, so as nearly to touch the abdomen, the aid of a long bistoury and the finger was for some time required before it could be disengaged from its various attachments. The acetabulum was not to be felt; no vestige of it remained; the hæmorrhage throughout was inconsiderable; no vessel required either ligature or torsion.

I need not say that, during this part, as indeed throughout the operation, I received the greatest assistance from my friends Drs. Brohier, Blood, Le Crognier, and Stevenson, the only medical men present. It was with their entire concurrence that the operation was performed; and the two former gentlemen, as on every other occasion, were most unremitting in watching the case with me. As anticipated, the operation was both long and troublesome, chiefly in consequence of the great difficulty of dissecting the removed portion of bone from its situation, and probably in some degree from not having made another incision at right angles with the first, which I now feel persuaded would have greatly facilitated the operation. Before any dressing was applied, the patient was placed in bed, and it was some time before she recovered consciousness. The pulse was then so feeble and fluttering, it could scarcely be felt; and the pain, particularly at the knee, so excruciating, that it was deemed best to change the somewhat straighter position it had been placed in to that which for years the limb had been accustomed to, and which occasioned the least pain. No splint was therefore used; bran cushions of various sizes steadied the leg and thigh; only two adhesive straps were applied, and this more for the purpose of affording a slight support than for closing the wound; lint moistened in cold water, and covered with oil-silk, completed the dressing.

Vespere.—There has been almost constant vomiting since the operation; restlessness and considerable pain; pulse 130, very weak; much thirst; the foot and leg of the affected limb cold, the right less so. Hot water in tins to be applied to the extremities. Tinct. opii, gtts. xxxv, to be taken in hot brandy and water; the latter to be repeated in small quantities every two or three hours.

Feb. 20th, mane.—The night has been a most distressing one; the stomach unable to retain anything; features drawn, and expressing anxiety; pulse as last evening; pain in the knee very severe; extremities rather warmer; much heat about the wound. Cold-water dressing to be continued, and saline draughts in a state of effervescence every three hours.

Vespere.—No amelioration of symptoms; the vomiting continues most distressing, and everything taken is almost instantly rejected; tongue brown and inclined to be dry; water very high-coloured, and in small quantities; exquisite thirst. A mustard cataplasm to be applied to the pit of the stomach, and iij drops prussic acid to be immediately taken, and 1½ every third hour afterwards, till the vomiting subsides.

21st, mane.—The night has again been very distressing, scarcely a quarter of an hour having passed without retching or vomiting; pulse extremely weak, upwards of 130; tongue much coated; features attenuated; bowels have not acted since the operation; cramp of the knee very severe; the straps have given way; the wound is extremely painful, and looks most unsatisfactory, gapes open at the centre full four inches, is of great depth, and its edges unhealthy. An aperient enema to be given, and a blister applied over the region of the stomach; an emollient poultice to the hip; one drop of creasote every three hours; beverage to be iced, and a piece of ice to be frequently allowed to dissolve in the mouth.

Vespere.—The enema acted moderately; complains much of the blister; great thirst, and excessive burning pain about the throat; vomiting has not subsided; appearance of the wound not more favorable than in the morning; extremities warmer; pulse ranges from 120 to 130.

℞ Infus. rosæ, ℥vj; mag. sulph., ℥j; acid. prus., gtts. viij.

A dessert-spoonful every hour.

22d, mane.—The vomiting and retching, though at longer intervals, are equally severe when they occur; has slept by snatches about half an hour during the night; feels greatly exhausted; pulse as yesterday; the whole inside of the wound assumes a sloughing appearance; the blister rose well. A fermenting poultice to be applied to the hip; medicine to be continued, and a glass of champagne taken occasionally.

Vespere.—Vomiting continues as frequent as at last report, but the quantity rejected is less; has taken half a bottle of champagne; pulse 120, rather fuller than it has yet been; wound has not at all improved. Continue the same.

23d, mane.—Has slept but little: nausea and burning sensation about the throat quite as severe as before; vomiting much less; has kept about half a pint of hot hollands and water (taken at different times) on her stomach; countenance less expressive of anxiety; bowels have been relieved once naturally; has much pain in the region of the kidneys; water the colour of stale beer; wound not improved. Draughts, composed of infus. calumb. and liq. potass., to be taken every four hours. Pledgets of lint, saturated with equal parts of sp. rect. and lemon juice, to be applied to the wound.

Vespere.—Not worse; has vomited only six times since the morning, and has kept much of the mixture and some strong beef-tea, taken in very small quantities, on her stomach.

24th, mane.—Much the same in every respect as yesterday; has slept a little, but complains of great pain from the lumbar region of the affected limb down to the foot; the wound has by no means improved, edges look very unhealthy, there is an erysipelatous blush about the groin, and slight œdema of the leg; tongue still brown, but not so coated; water still very dark, but less so than yesterday. A quantity of scraped lint, perfectly saturated with a thin paste, made of fresh yeast and powdered charcoal, was at this visit applied to the wound, and the whole thigh, including the groin, covered with a linseed poultice; a continuation of gin and water ordered, (neither wine nor brandy remained five minutes on the stomach,) also beef-tea, and to continue the mixture; soda-water and ginger-beer when the thirst was excessive.

Vespere.—Day has passed much the same as yesterday; the erysipelatous blush perceived this morning has not increased; pulse still extremely weak. Mist. gal. comp. to be frequently taken.

25th, mane.—Gin and water and beef-tea, both given in small quantities, seem to agree best with the stomach; the mist. gal. comp. was rejected almost as soon as taken. Has slept about an hour during the night; the pulse is under 120, and possesses more body than it has done since the operation; tongue cleaner; and the patient is more hopeful. The wound presents a much more gratifying appearance; a considerable quantity of slough came away with the dressing; edges appear less raised and more florid. The same dressing to be continued, and the patient, at her own request, is to be allowed porter.

26th.—Much of the porter taken yesterday remained on the stomach, also a little minced chicken, and the yolk of a clear boiled egg; the bowels were acted on during the night; has slept for longer periods than before; pulse

firmer, and tongue, though much coated, is moist; temperature of the skin natural; wound has very much improved, and is much less painful; much more of the slough has come away, and healthy granulations are to be seen in several places; no appearance of erysipelas. Same dressing to be continued. Three adhesive straps applied, for the purpose of support, and, in some degree, to approximate the edges.

March 31.—As a daily report of the progress of this case would be tedious, and present little to interest, I shall merely mention that, since the last notice, there has been a very gradual though steady improvement; the stomach at times has been very irritable, and every kind of nourishment chosen by the patient has agreed with it far better than any recommended; she has, therefore, almost always had what she pleased. The pulse has gradually fallen to a few beats below 100, and, at the same time, has increased in strength; the tongue has assumed a more natural appearance than it has done for many months. The charcoal and yeast dressing was discontinued on the fifth morning after its first application, all appearance of sloughing having gone off.

On the 5th of March she was placed on "Hooper's water-bed," (unfortunately for the patient's comfort, I had no bed answering this description till then,) and, for the first time, an attempt was made to straighten the limb, for the purpose of placing it in a suitable splint. The attempt caused such excessive pain, more particularly in the knee, that it was abandoned, and the first plan persevered in till yesterday, when the position of the limb was considerably improved. The wound, though still very large and deep, looks healthy, as does also the discharge, which has considerably lessened in quantity. She takes a bottle of porter and one of port wine in the course of the twenty-four hours.

May 10.—The patient has progressed satisfactorily since the last report; her appetite, as well as her general health, has considerably improved. She does not sleep well at night, but this probably arises from the body remaining so constantly in the same position. The bowels are still inclined to be constipated; she has, therefore, for some time past, taken small doses of decoct. aloes c., not only for the purpose of keeping them open, but likewise to act as an emmenagogue. Three days ago the catamenia appeared, the first time for eight months. The wound is very much closed, to some extent cicatrised; there are still four or five sinuses, but the discharge from them is by no means copious; pus laudable. She continues to choose her own diet, and takes porter and wine as before. The wound has throughout been dressed in the most simple manner possible,—small squares of lint, moistened with warm water, covered with oil-silk, and a few adhesive straps.

June 1.—Left her bed for the first time, and sat in an easy chair for two hours,—a proof that the patient progresses most favorably.

Last report. October 6.—Not one untoward symptom has occurred since last report. At first, the patient sat up for a short time every second or third day; during the last two months she has rarely remained in bed for a whole day. The wound has for some time been healed, and is firmly cicatrised, with the exception of one part, which still continues open; this is not nearly the size of a small pea; it leads to the only sinus now existing, which is by no means deep, and is gradually filling up, the discharge from it not being more than three or four drops in the twenty-four hours. Pressure round the parts gives not the slightest pain, and both limbs are of equal size; she is now stouter than she has ever been, and much inclined to corpulency. The only pain complained of is over the right kidney; this, she informed me to-day, has for many years, distressed her at times. She has, during the last eight weeks, occasionally walked round the grounds of the hospital, with the

assistance of a high-heeled shoe, and one crutch, carried on the opposite side. Three or four times she has walked across the ward with only the help of a stick, and once a few steps without any assistance whatever. When lying on her back, she is able to raise the entire limb; when standing, she can throw it backwards and forwards without pain, and with perfect ease, and is able to bear almost the entire weight of the body on the affected side. She seems most comfortable with the foot inverted, though she is able to cross either leg over the other.

## Art. 112.—*Sequel to Mr. Fergusson's case of Excision of the Head of the Femur.* By Mr. Henry Smith.

(*Medical Times and Gazette*, Dec. 4, 1852.)

A few days ago, writes Mr. Smith, I had the opportunity of ascertaining the present condition of the patient, John Clerk, upon whom the operation of excision of the head of the femur was first performed in King's College Hospital, by Mr. Fergusson, in March, 1845, now nearly eight years ago; and, having made a careful examination of the limb, and noted down the results, I forward you the particulars.

The subject himself is now a fine, stout, and hearty young man of 21, and can undergo a great deal of exertion; can walk, he says, twenty miles, and is in every respect in perfect health. On stripping him, and making him stand up in the room without any support, I find that the limb operated upon is perfectly straight from the body, but is slightly everted. The toes are planted firmly on the ground; and, by admeasurement, the distance from the centre of the heel to the ground is four inches and a half. The circumference of the thigh, just above the middle, is sixteen inches, while that of the sound limb is nineteen inches. The cicatrix in the line of incision is firm; and, in its centre, the end of the thigh bone can be very distinctly felt somewhat rounded, and playing easily upon the ilium when the limb is moved.

On desiring the patient to sit down in a chair, I find that he can bend either limb upon the pelvis with almost equal facility: there is also considerable power of extension, rotation, and also (what has been absent in other cases) of abduction. The young man had walked up to my residence with a stick, a considerable distance. He wears a high-heeled boot. The sound limb is considerably bent, from the knee downwards, to accommodate itself to the deficiency in the other, and thus this man does not limp very much in progression.

I presume that this account of the present satisfactory condition of John Clerk will not be uninteresting to those who take pleasure in the advance of true conservative surgery It will also, probably, be satisfactory to those sceptical gentlemen who have doubted, or affected to doubt, as to the utility of a limb as a means of a progression after the head of the thigh bone has been removed; for this is, in reality, one of the most important questions connected with this operation; not the most important, however, because in this instance, as in some others, the proceeding was adopted solely for the purpose of saving life, as those gentlemen who with myself can recollect the miserable condition in which John Clerk, then a wretched puny child of fourteen, was in when he was carried into the operating theatre in the arms of one of the dressers, can aver.

ART. 113.—*On the Treatment of Fractures of the Femur by a Simple Modification of Liston's Splint.* By R. G. H. BUTCHER, Esq., Surgeon to Mercer's Hospital, &c.

(*Dublin Quarterly Journal of Medicine*, Feb. 1853.)

Numerous disadvantages, writes Mr. Butcher, are laid down by writers, as resulting from the use of Liston's splint. It is stated that permanent eversion is likely to occur; that inversion of the foot, knee, and lower fragment may take place, the result of rotatory displacement; that much of the force necessary for extension is lost, owing to the obliquity of the counter-extending belt; that the ankle and groin are likely to suffer from pressure; that the pressure made across the groin causes great œdema of the whole limb, in consequence of the obstruction which is caused to the circulation in the inguinal veins and absorbents; and lastly, the objection made by Earle, that the limb being bound to a perfectly straight body, placed at the outside of the thigh, and considerable pressure made on the inner side of the knee in fractures of the shaft of the bone, tends to destroy the natural obliquity of that part, and bring it more into a straight line, which he states is not only destructive to the symmetry of the limb, but impedes progression, and renders the erect posture less secure. No doubt some of these untoward results arise from an inefficiency in the splint to accomplish all that is required, while others are created by its not being properly adjusted. To remedy these defects, Mr. Butcher offers to the profession a modification of the splint, which he has been in the habit of using with the very best results. This splint, Mr. Butcher remarks, has met with the warm approval of his colleague, Mr. Tagert.

The alteration is very simple, and consists in the addition of a piece of wood placed in a transverse direction beneath the lower end of the splint, and upon which its edge rests. The splint is steadied in this position by means of a long screw conveyed through a socket rivetted vertically on the side of the splint. The upper end of the screw has fitted to it a brass handle placed across, while the lower end terminates in a cylinder which is received into the centre of the piece of wood, and fastened in a hollow beneath by means of a nut and washer. The cylinder, as contrasted with the screw, is somewhat contracted, and presents at its commencement a shoulder which rests upon the steel plate on the upper surface of the transverse piece of wood, while the remainder moves freely in the tube for its reception. From this it must follow that, by a few turns of the screw, the splint may be elevated or depressed at pleasure. Another advantage resulting from this mechanism is, the facility with which the splint can be reversed, the screw changed, and its adaptation to either limb effected.

The splint may be made of seasoned pine; its length, as will be seen presently, must be in accordance with the height of the patient. The length of that represented in the drawing measures four feet four inches; the widest part at its upper end being four inches and a half, which gradually diminishes downwards to three inches and three quarters opposite the ankle. It is eight lines thick, and is deeply notched at the lower end to the depth of four inches; whilst it is pierced at the upper by two circular holes, two inches and a half apart. There is cut in the lower end of the splint, corresponding

to the outer ankle, an oval aperture, the centre of which is eight inches and a half from its extremity; and the socket for the screw is placed midway between its circumference and the acute angles formed by the notches. The length of the transverse piece of wood is fourteen inches; its breadth two inches and a half, and its depth two inches. The height of the screw above it measures eleven inches; and the length of the cross handle two inches and a half. A long cushion, somewhat wider than the splint, is applied to its inner surface, and extends from the apertures above to a point opposite the attachment of the screw. This cushion is retained in position by four straps and buckles; it is stuffed with horse-hair, and perforated for the reception of the ankle. The corresponding hole in the splint has tacked into it a pad, softly filled with a like material, and covered with chamois leather.

The application of the apparatus, modified as I have described, is almost exactly in accordance with the directions given by Liston,—the screw and transverse piece of wood being detached, the splint is applied nearly in a similar manner; there are, however, some cautions to be observed in its adjustment which he has not adverted to, yet a strict observance of which I consider absolutely essential, that the same satisfactory results may be obtained as followed in the embarrassing cases that I have detailed.

First, as to the preparation of the splint, and the guarding of the ankle from pressure. It has been stated that the splint is perforated, and has, adapted to the aperture, a soft chamois cushion; that a suitable pad extends along its inner surface, with a similar opening for the reception of the outer malleolus: but this is not enough; there is also an additional pad, of variable thickness, required to lie between the outer surface of the knee and the padded splint; or, in other words, to fill up the space between them occasioned by the natural obliquity of the thigh bone, this is, of course, from the breadth of the pelvis, greater in women than in men. The next point is, that the limb should be drawn down to its full length, the broken bones coapted and retained so by assistants, the ankle, heel, and dorsum of the foot rolled with soft wadding, the depression above the outer malleolus obliterated by additional folds of it, and the entire supported with a roller neatly applied from the toes to above the knee; then the ankle may be lashed to the splint, the surgeon taking good care that the turns of the bandage be even above the ankle, and secure the heel closely to the splint; if this be correctly done, eversion of the foot will be prevented. The ankle being thus fixed, and the extension at the same time fully kept up, the perineal band is to be applied; this lac must be made of soft material and well stuffed, at the same time that a strong piece of tape is stitched along its entire extent, from one end to the other, to prevent its yielding; in its application care should be taken that it lies evenly up against the ramus of the ischium and pubis, that when the ends are brought through the holes at the upper part of the splint to be tied, they may be drawn on with an equal force; because otherwise the integuments will be wrinkled, and quickly excite much irritation. Until the lac is tied the required extension should be kept up by an assistant at the ankle, so as to obviate the reprehensible practice of thrusting the splint with the lower part of the limb downwards; for if this manœuvre be employed, the folds of the bandage connecting the splint to the ankle are more or less altered in their direction: they no longer lie even, their upper edges constrict the part, and the skin is unevenly strained; if so, it soon irritates; inflames, and becomes so exceedingly painful that the patient demands the removal of the dressings altogether. The great advantages obtained from the length of the splint being preserved can be appreciated when the lac is applied; the counter-extension is directed exactly as the extension, in the most favorable line,—

the axis of the thigh bone; because, as before noticed, its inclination is slightly inwards; from this direction then it follows, not a particle of force is misdirected or lost. Again, with regard to the holes for the reception of the ends of the counter-extending belt, I have mentioned they should be two inches and a half apart, or, more correctly, close to the edges of the splint; this favours the proper axis of traction, and takes the pressure in some degree from the trunk before and behind. From preserving the full length of the splint greater advantages still flow. In fractures of the thigh bone, approximating the hip-joint, the upper and lower fragments cannot be pressed upon and forced out by the perineal belt, because its action is directed upwards; this occurrence may take place if the splint be short, and applied as is usually represented in books; but if adjusted as originally intended by Liston, and according to the directions I have given, no such untoward result can follow. Besides, the pressure of the perineal bandage occasions no uneasiness when directed upward; while on the contrary, if strained outwards across the groin to reach the splint, undue pressure is made on the tender integuments, veins, and numerous lymphatics of this region, and, above all, against the sharp edge of the adductor muscles. The foregoing objections fully apply to Boyer's splint; the pressure of the counter-extending belt cannot be borne, and it must displace the fragments if the fracture be situated high up. After the requisite extension has been secured, the next step is to turn a roller round the limb and splint, commencing at the ankle and continuing it to about the centre of the thigh: during this proceeding it is necessary that the limb be fairly supported, and not permitted to gravitate backwards. A few turns of a wide bandage are likewise made to encircle the trunk and upper part of the splint, and pinned to the counter-extending belt before and behind it. It only remains now to pass the screw through the socket, and attach to it the transverse piece of wood in the manner already described, and the apparatus is perfected, so as altogether to preclude the possibility of inversion or eversion of the foot and lower fragment. It will be observed, by a reference to the plate, that the splint is raised at its lower end from the mattress, by the depth of the transverse piece of wood, and a thin pad fills the intervening space. By this arrangement the foot is somewhat elevated beyond the rest of the limb, and the returning circulation favoured.

Frequently, when a patient is under treatment for fracture of the thigh by the ordinary method with the long splint, he will complain of pressure at the heel, owing to the limb resting for a length of time on its posterior surface; this unpleasant contingency is entirely obviated by the simple employment of the screw as applied by me; for by a few turns of it any required elevation may be attained, and another annoyance is likewise removed by the transverse handle bearing off the weight of the clothes from the foot. Lastly, from the treatment by continued extension, as I advocate its application, I have never seen troublesome abrasions, relaxation, or weakness of the ligaments of the knee or ankle-joint to result.

ART. 114.—*Elephantiasis Arabum of the Right Inferior Extremity successfully treated by Ligature of the Femoral Artery.* By J. M. CARNOCHAN, M.D, Professor of Surgery in the New York Medical College, &c.

(*New York Journal of Medicine*, Sept. 1852.)

The following case is possessed of peculiar interest, both from the

novelty of the treatment employed and from the successful issue of that treatment.

Case.—Charles Roller, of lymphatic temperament, and short stature, æt. 27, born in Aix-la-Chapelle; occupation, merchant, left his home in December, 1849, landed in New York in February, 1851, went thence to Connecticut, where for eight months he worked in a factory, standing during his hours of labour; thence went to Virginia, where he worked on a farm for about six months, at the expiration of which period he was taken with fever, of an intermittent character. Up to that time, he had always been in good health.

During the fever, the inguinal glands became swollen and painful; the swelling and pain extending in the course of the femoral vessels as far as the knee. The pain was followed by swelling and redness of the thigh down to the knee. From the knee the pain and swelling continued to extend downwards as far as the toes, being at this time confined chiefly to the portions of the limb along the course of the saphena vein, and also of the posterior tibial vessels. The redness and tumefaction here, as in the thigh, was preceded by deep-seated pain. The tumefaction of the limb continued to increase, while at the same time febrile exacerbations occurred at intervals, varying from two to six days. After a period of about six weeks from the commencement of the disease, the fever entirely disappeared, and by this time also the pain and redness had entirely ceased, the limb however remaining hard, swollen, and rough, and presenting, in a marked degree, the peculiar characteristics of elephantiasis Arabum, in the chronic period of the disease. From this time forward the hardness and intumescence gradually increased, and the limb became so cumbersome that the patient was obliged to give up all business, and confine himself chiefly to a recumbent posture. In this condition the patient left Virginia for the purpose of seeking medical relief at the New York Emigrants' Hospital, into which he was admitted the 15th of January, 1851. The appearance of the patient upon entering the hospital was somewhat emaciated. He had no febrile symptoms, and the chief difficulty under which he laboured, arose from the enlarged and hypertrophied condition of the right inferior extremity.

The limb was enlarged from the toes to within a short distance below Poupart's ligament. The thigh, although enlarged, was not much indurated; while, from a short distance above the patella, downwards, the limb presented a dense, hypertrophied, hard, scaly, shapeless mass.

The morbid condition of the tissues pervaded the foot and toes, there presenting groups of tuberculated growths. The circumference of the limb around the ankle was nearly as large as that of the calf, measuring fifteen and one half inches, while the circumference of the calf measured nineteen and one half inches.

The patient was put under treatment upon entering the hospital. The recumbent posture was enjoined, and for some time various discutient lotions were used. Bandaging was resorted to, with frictions of ung. Potassii Iodidi; the iodide of potassium being also prescribed internally.

At times also the limb was painted with strong tincture of iodine; local and general baths were used, regular bandaging of the limb, from the toes upward, being the while carefully observed.

This plan of treatment was perseveringly adhered to from the 15th of January to the 22d of March, a period of a little over two months, without any amelioration. Having thus tried, without success, the method of treatment most approved of, I proposed to place a ligature upon the femoral artery, with a view of changing the morbid condition of the structures supplied by the branches of this arterial trunk. A consultation was held, and

my proposition was acceded to as preferable to amputation, the usual alternative resorted to in this stage and extent of the disease. Accordingly, on the 22d of March, 1851, I secured the femoral artery, a short distance below the origin of the arteria profunda. Upon exposing the femoral artery, this arterial tube was found to be changed, so as to present an appearance somewhat like the colour of the aorta of the ox, and to be larger than the common iliac of the human subject. In consequence of this appearance of the artery, after some hesitation I applied the ligature, preferring to do this, rather than to expose the external iliac, of the soundness of which I could not be certain.

The ligature came away from the femoral artery on the eleventh day, accompanied by secondary hæmorrhage, the occurrence of which I had expected as probable. For the purpose of arresting the hæmorrhage, the *external* iliac artery was secured by ligature, by Dr. A. E. Hosack, who happened to be on duty at the time in the hospital. The external iliac was found to be about the size of the brachial artery. This for a time apparently had some influence upon the hæmorrhage; but on the following day bleeding was again renewed from the orifice, in the femoral artery, with as much profusion as ever.

The hæmorrhage was now restrained by the prompt application of a tourniquet, on the *cardiac* side of the bleeding orifice, by the house-surgeons, Drs. Thompson and A. K. Smith.

This even failed to stop permanently the hæmorrhage, and the blood recommenced oozing copiously at intervals. The patient was now sinking fast, and the ligature of the common iliac, or amputation at the hip-joint, appeared to be the only resources left. But the hæmorrhage now being evidently reflux, it was suggested to apply the tourniquet, so as to produce compression on the *distal* side of the bleeding orifice: this was done, and was followed by a complete cessation of the bleeding.

From this time (April 4th, 1851), the house-surgeon kept an instructive record of the case, which record I have now before me. For several days, the pulse ranged from 115 to 108: the dressings were carefully attended to, and light diet prescribed. On the 12th the leg was found to be considerably reduced in size, and the ligature of the external iliac came away. On the seventeenth, brandy and quinine, with good nourishment, were ordered, On May the first, finding the leg still more reduced and the lower wound healed, I ordered tincture of iodine to be painted on the leg, and the bandage to be continued; I also ordered a solution of chloride of soda to be used as a wash on the upper wound, which continued to discharge freely.

The patient now went on gradually improving in strength and appearance, and left the Hospital in the latter part of June, completely cured of his malady. At this date, sixteen months after the ligature of the femoral artery, the patient is in robust health, and presents no indications that the disease will return.

## Art. 115.—*On a New Mode of Remedying Cartilaginous Bodies in the Knee-Joint.* By James Syme, Esq., Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Monthly Journal*, Nov. 1852.)

The risk of serious and even fatal consequences which attends the removal of cartilaginous bodies from the knee-joint by external incision (writes Mr. Syme), led me to think of another method by which the object might be more safely accomplished. This was making a subcutaneous opening in the synovial membrane, through

which the body having been passed might be either allowed to remain embedded in the cellular texture, or removed at a subsequent period without disturbance of the articular textures. On the 1st of February 1841, this proposal was carried into effect on a patient, who had been admitted into the hospital under my care, for relief from a cartilage of considerable size, and with complete success, as will appear from the account published in this Journal for the following month (March). The same idea had occurred to a French provincial surgeon, M. Goyrand, who published an instance of its application in practice. The first notice of this case, which was quite unknown to me, did not appear in the English journals until April.

Although, as frequently happens with procedures not destined to maintain a permanent reputation, this operation succeeded perfectly on the first occasion of its performance, it was soon found to labour under a very serious objection. This was from the difficulty, or rather impracticability, frequently experienced in effecting displacement of the cartilage through a subcutaneous aperture of the synovial membrane. In order to remedy this defect, Mr. Liston proposed to introduce the knife twice, and make a double incision. But, while the difficulty was thus very imperfectly removed, the advantage of the operation was in a great measure sacrificed by the complication of procedure.

Having become satisfied that displacement by subcutaneous incision could not be depended on for the remedy of this disease, I endeavoured to think of some more effectual mode of affording relief, and soon afterwards met with a case which has, I hope, ultimately led to the accomplishment of this object. The patient came from Yorkshire, to get a cartilage removed from the knee-joint. Upon examination, I found that the body, which was of more than average size, lay over the external condyle, and learnt that, although previously very troublesome, it had occasioned no uneasiness since occupying this position, which it had done without any change since a short while before he left home. I was still urged to perform the operation, but declined, in the hope that there would be no further occasion for it, and therefore ordered merely a blister to be applied from time to time. Some months afterwards the patient informed me that the cartilage kept its place, had decreased in size, and given him no uneasiness whatever.

In the next case that presented itself, I endeavoured to produce the effect of this natural process, by thrusting pins and needles through the cartilaginous body, together with the superjacent textures, so as to prevent any motion for days and weeks; but without success, as the restraint was no sooner withdrawn, than mobility, with its attendant consequences, returned. I then tried to effect displacement by subcutaneous incision, also without success; and, finally, in compliance with the urgent desire of the patient, removed the body by external incision. As inflammation and suppuration of the joint followed, notwithstanding every practicable precaution, I felt more than ever the importance of discovering a more safe substitute for this procedure; and upon the next occasion adopted the following method.

The cartilaginous body having been urged to the outer side of the joint, and pressed down over the external condyle of the thigh bones as close as possible to the head of the fibula, and kept in this position by the finger of the left hand, I introduced a tenotomy knife obliquely through the integuments and subjacent textures, until it reached the cartilage, into the substance of which I cut freely, so as to make sure of fully dividing the synovial membrane. A compress and bandage were then applied, so as to maintain the body in its place, and leave room for the application of a blister on the surface. Adhesion was thus accomplished, and in the course of a short time followed by a distinct diminution in the size of the cartilage, which occasioned no further trouble. Two other bodies, which existed in the same joint, were treated after the same fashion, and with the same result. My colleague in the hospital, Dr. Mackenzie, has employed this method in one case with complete success; and I may here give the particulars of another, which lately occurred in my own practice.

"Alexander M'Pherson, æt. 27, shepherd, Glenorchy, admitted September 1st, 1852. About five weeks before admission, he felt himself suddenly 'crippled' as he was walking; this occurred a second and a third time, and was on each occasion attended with intense pain in the knee-joint. He examined the joint carefully after one of these sudden fits of lameness, and at length discovered a moveable body. He was advised to go to Edinburgh, to obtain the advice of Professor Syme.

"On admission, the loose cartilage can be easily felt, and appears to be about the size of a garden bean; after he had walked a few steps, it usually takes up its position between the inner condyle of the thigh bone and the internal tuberosity of the tibia. When he lies down, the moveable body slips up the inner side of the synovial membrane, crosses the joint, and may then be obscurely felt about an inch and a half above the outer edge of the patella.

Sept.13.—Mr. Syme having felt the cartilage in the position last described, pushed it down the exterior side of the joint, and pressed it firmly against the synovial membrane, close to the head of the fibula. The knee being bent, Mr. Syme entered a straight tenotomy knife through the integuments, and made an incision into the surface of the cartilage, which was immediately afterwards fixed by a strip of adhesive plaster. A blister, about the size of a crown-piece, was then applied over the seat of the cartilage.

14.—The blister has risen; there is not the slightest degree of constitutional disturbance.

16.—Patient continues well.

23.—Cartilage seems fixed; he now moves his leg a little.

29.—The moveable body cannot be felt.

Oct. 18.—Discharged cured.

ART. 116.—*Some Statistical Information respecting Compound Fractures of the Leg and Thigh.* By GEORGE W. NORRIS, M.D., Surgeon to the Pennsylvania Hospital.

(*American Journal of Medical Sciences*, Oct. 1852.)

The following valuable table, contrasting the hospital experience of Pennsylvania and New York, between Jan. 1, 1839, and April 1,

1851, occurs in an elaborate paper, by Dr. Norris, upon the statistics of fractures and dislocations in the hospital to which he is attached.

| | Whole number of cases treated from January 1, 1839, to April 1, 1851. | Cured. | Died | Proportion of cures. |
|---|---|---|---|---|
| Pennsylvania Hospital | 166 | 95 | 71 | 57·23 per cent. |
| New York Hospital | 158 | 79 | 79 | 50 do. |
| | Compound fractures of the thigh. | | | |
| Pennsylvania Hospital | 27 | 11 | 16 | 40·74 per cent. |
| New York Hospital | 26 | 5 | 21 | 19·23 do. |
| | Compound fractures of the leg. | | | |
| Pennsylvania Hospital | 139 | 84 | 55 | 60·43 per cent. |
| New York Hospital | 132 | 73 | 59 | 55·30 do. |
| | Amputations done in the above cases. | | | |
| Pennsylvania Hospital | 50 | 30 | 20 | 60 per cent. |
| New York Hospital | 32 | 14 | 18 | 43·75 do. |

ART. 117.—*The Treatment of Obstinate Ulcers and Cutaneous Eruptions of the Leg, without Confinement.* By MR. CHAPMAN, late Surgeon to the St. George's and St. James's Dispensary.

(London, Churchill, 2d edit., 12mo, 1853, pp. 156.)

The object of this useful little work is,—"*first*, to place in as strong a light as possible the greater efficacy and expediency of the treatment by bandaging, which seemed to be declining in repute, as compared with that by rest, which appeared to be once more gaining ground; *secondly*, to suggest a substitute for Baynton's strapping, exempt from its inconveniences, and to extend the principle of support to cases in which it had hitherto been considered as totally inadmissible; and *thirdly*, to advocate aqueous dressings,—that is to say, watery solutions and preparations in preference to topical applications of an unctuous kind." The work itself (which will well repay perusal) must be consulted for full information upon these points; but this quotation and the following form a concise statement of Mr. Chapman's argument:—

It remains, finally, to sum up and consider the bearing of the various practical points here discussed upon the two questions:—1st. Of the comparative value of rest and support by bandaging in the treatment of ulcers; and 2d. Of the relative position which topical applications ought to hold with respect to these two principles.

It appears, then, *first*, that although *both* rest and support are especially adapted to counteract that morbid condition which is the substantial source of the intractability of ulcers on the leg, almost all writers on the subject agree

in expressing great doubts of the permanence of the cure accomplished under the influence of the former. But were they equally to be relied on for completing and maintaining the cure, in the vast majority of cases, the circumstances of the patient absolutely prohibit the efficient employment of rest. On the score, therefore, both of its superior efficacy and of its expediency, the weight of experience may be very decidedly quoted on the side of support by bandaging.

And, *secondly*, if Whately and Baynton—by demonstrating that careful and judicious bandaging is capable of superseding topical remedies altogether in a very extensive range of cases—exposed, on the one hand, the fallacy of that exaggerated opinion of their virtues which was formerly entertained, it is clear, on the other, that they fell into the opposite error, and formed much too low an estimate of their real claims to consideration. And this mistake not only rendered their own practice less successful than it might otherwise have been, but has contributed to turn the scale once more in favour of rest employed in combination with them. Many topical applications are unquestionably very serviceable auxiliaries to both rest and support; the more important are essentially necessary as preparatory measures for the latter. But the fullest recognition of their true claims in no way brings them into competition with either principle, in relation to which they are no more than subsidiary forces, amd ought never to have been raised to the rank of equivalents.

To come back, therefore, to the point from which we started, "instead of limiting our resources by taking up and advocating any one remedy or line of practice exclusively," I contend that, whilst we show a readiness to avail ourselves of *all* special measures, constitutional as well as local, which are calculated to meet the numberless exigencies of the complaint, the bandage, properly constituted, must ever be looked upon as the necessary superaddition to, or complement of, all other means of cure whatsoever.

## Art. 118.—*On the Lateral Deviation of the Great Toe.* By M. Malgaigne.

(*Rév. Méd.-Chir.*, xi, 212—224; *Medico-Chir. Rev.*, Oct. 1852.)

While M. Malgaigne was surgeon to the aged men's Asylum, the Bicêtre, one of his duties was to examine the feet of those who petitioned for shoes in lieu of *sabots;* and he was soon struck with the great frequency with which deviation of the great toe presented itself,—this sometimes amounting to a true luxation. Laforest, Millet, and Broca, who have written on this affection, agree in attributing its occurrence to wearing tight shoes, and in stating that it is oftenest met with in women. Laforest has observed the deviation of the first toe above the second to be the most common; Millet, its deviation against it; while Broca has oftenest observed the deviation below. Malgaigne has observed all these, but especially the deviation above. M. Malgaigne at first, like others, attributed the occurrence to wearing tight shoes; and it was only after finding that the most rigid inquiry could only verify this cause in a few instances, that he altered his opinion. If, indeed, this were a sufficient cause for its production, every one with the shoes worn at present would be liable to it; while we find that, however tight the shoe may be, when it is removed, the toes expand as before it was put on, without leaving any trace of their temporary inclination. In several of the cases

examined, cold and rheumatism were referred to as the original cause; and in some of these, the simultaneous deformities of fingers and toes indicated this general cause. The *rationale* of the affection, in other cases, seems to be, that the ligaments of the joint become enfeebled, so that even moderate muscular action, not counterbalanced by their resistance, suffices to produce the deviation. The cause of this weakening of the ligaments may be due to the slight but prolonged irritation, caused by the friction not only of too tight but of too loose shoes; and a callous condition of the skin indicative of this often precedes the deformity. A persistence of the deviation may cause the production of retraction of the muscle and ligament; and in some instances the irritation spreads from the ligaments to the bone, and by inducing hypertrophy of the head of the metatarsus, renders the deformity irremediable. The bone may become partially luxated, and the sesamoids displaced.

# PART III.

## MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

### (A.) CONCERNING MIDWIFERY.

ART. 119.—*Sudden Enlargement of the Abdomen During Pregnancy.* By Dr. CHANNING.

(*American Journal of Medical Sciences*, Oct. 1852.)

This singular case is extracted from the records of the Boston Society for Medical Improvement.

CASE.—Mrs. ——, æt. 20; married. Was called to see this case in consultation with the attending physician. On reaching the address, Dr. Channing learned that, a week before, the patient complained of pain in right side of trunk, reaching quite down to and through the pelvis on that side. At times, the pain greatly increased, shooting up to right shoulder, side of head, and especially to the eyes. Vision at such times impaired, or lost. He was told that the patient was about four months pregnant. That she had been thought pregnant some months before her present state, and had successfully used the means of procuring abortion. In her present pregnancy had been troubled with vomiting for about two months; but this had ceased three or four weeks ago. She was still taking medicines for abortion, especially those sold by a woman named Restell, and had been taking them at the time of the attack, a week ago. She had been very hot; with very rapid pulse; intensely flushed; at times delirious; very thirsty. Dr. C. found this history confirmed by seeing the patient. In addition, he found her to be very nearly speechless; that is, she was labouring to speak, but could hardly articulate a word. She obviously wished for something, but, with all her efforts, could not make her wants known. Swallowing was nearly impossible; violent choking and suffocation attended any attempt at deglutition. It did not seem that anything passed into the œsophagus. Tongue dark brown, dry, rough, cracked. The face was of the deepest crimson; eyes brilliant; skin hot. Pulse between 150 and 160; of sufficient strength. She was very restless. Respiratory sounds were stertorous, resembling the dry, husky, shrill breathing of croup or laryngitis.

Examination of the abdomen furnished very interesting results. The abdomen was filled and distended by a large tumour, as hard, nay harder than is the impregnated womb. Flat on percussion, and without fluctuation. Tender on pressure. Auscultation discovered neither the placentary murmur, or *bruit*, nor the sound of the fœtal heart. Dr. Channing had not heard of this uterine or abdominal distension, nor of the suddenness of its occurrence. He inquired concerning these points, and learned that, previous to Friday last, a week ago, Mrs. — was no larger than is usual at the fourth or fifth

month. That, being down stairs, she told a friend of the sudden increase of size, and begged her to feel the abdomen. As she had never detected any fulness before, the present state of things struck her as very extraordinary. Her physician had seen her on Friday, before an attack of the pains in the abdomen, and elsewhere, as above described; but was sure that her size was then natural. He, however, had not stated that she had so suddenly increased in bulk.

*Examination per vaginam.*—This showed the vagina to be entirely empty. Its *cul-de-sac* was drawn up almost out of reach, and felt to be forcibly on the stretch. Os uteri could not be reached. It was at once inferred that, in the rapid growth of the womb (for the distension of the abdomen could not be well explained without referring it to enlarged womb), it had risen strongly into the abdominal cavity, and had dragged up with it its vaginal connections.

The question now arose, upon what the sudden enlargement of the womb depended. At first, it was asked if it did not depend upon *internal uterine hæmorrhage*. Dr. C. had been called to a case of this kind occurring at a late period of pregnancy. Death had occurred before he reached the address, and this was only about ten hours after the first symptoms of uterine trouble were manifested. These were agonizing uterine pain, violent jactitation, paleness, faintness, sunken pulse, coldness, increased fulness and tenderness of abdomen, &c.—the ordinary symptoms of great hæmorrhage. Examination discovered the womb to be full of blood; the placenta and membranes everywhere detached from the womb, and an eight months' child in its cavity. In none of its symptoms did the present case resemble that just briefly described.

The whole situation of the patient was so critical, and the extreme difficulty of deglutition so great, every attempt apparently threatening death, that it was pretty obvious she could survive but for a few hours only. Dr. C. learned, early in the morning following his visit, that Mrs. — died at 8 o'clock the evening before, and about four hours after he left her house.

*Autopsy, twenty hours after death.*—External appearance and state, striking. The face, especially the cheeks, which had been intensely red the day before, retained their colour perfectly. The blush was so distinct that it seemed impossible that life had departed. The limbs were, however, perfectly rigid. Sugillations existed in all their usual situations—neck, back, axillæ, &c. &c.; the whole state, in short, showing the questionless presence of death. The abdominal tumour was softer than before death, and had somewhat subsided. Upon opening the abdomen, the womb was found reaching from the symphysis pubis to the epigastrium, and filling out fully the sides of the abdominal cavity. It was mottled, or rather streaked with dark, livid markings, which have never been before met with by Dr. C., and looking as if its cavity were filled with a dark fluid. The surface was perfectly smooth, and without any marks of inflammation of its peritoneal cavity. Upon raising the womb, the Fallopian tubes were found pairing off from its sides midway of the organ, precisely as happens to them at the close of pregnancy. The ovaries presented a very singular appearance. Upon raising the womb, they were seen hanging at its sides about five inches in length, and very closely resembling in shape the enlarged kidney, having the narrowing or depression of that organ at the pelvis. The ovaries were filled with a fluid in cysts. It did not resemble the ordinary oily fluid of ovarian dropsy. On the contrary, it exactly resembled water. The ovaries were distended with this liquid, and so weak were the cysts that they broke and discharged their contents on very slight pressure, or careless handling.

Upon opening the cavity of the womb, about four quarts of perfectly colourless fluid flowed out. At the close of the discharge, some blood appeared. This had probably been effused recently, or during the examination, as the water was not in the least coloured by blood. A fœtus was seen in the lower part of the womb in its membranes, and being removed, another fœtus was discovered still lower in the external cavity. Both were males, and the first seen was much larger than the other. The cords passed downwards, and were found springing from a single placenta, situated over the os uteri, and attached to its neck. The placenta was easily detached, being softened almost to the state of grumous blood. The decidua was very distinct in patches; but generally it was found separated from the uterine surface. The substance of the womb was about four lines in thickness, and seemed watery. There was no effusion into the peritoneal cavity. There was no other disease discovered.

*Remarks.*—The distinguishing fact in this case is the rapid increase in the size of the abdomen. It occurred almost in a day. It had been preceded by pains, and weakness, loss of appetite, great heat, rapid pulse. But the medical attendant felt sure that, up to the time above spoken of, one week before my visit, he had discovered no increased size. The question occurred, to what this rapid formation of fluid was owing; what was its source? Dr. Channing supposes it to have been secreted by the womb, and that it was collected between it and the membranes. He thinks the preceding symptoms show this, and that no case of excessive *liquor amnii*, in his recollection, presents such symptoms. In this last disease, the fluid collects slowly, and becomes a cause of trouble and distress by the over-distension accompanying it. Then, again, Dr. C. said, the very unusual state of the ovaries savoured strongly the doctrine that the fluid in the womb was directly produced from the organ itself, and not from one of the fœtal membranes. The ovaries were both of them very large, the right the larger as well as the fœtus in the right part of the womb much larger than the left one. This size was owing entirely to serous effusion into, and distension of the ovarian vesicles, as before stated. Dr. C. thought it was highly probable that the disease of the ovaries began at the same time with that of the uterus.

*Of the treatment.*—It was pretty clear on Friday, as Dr. C. remarked, that treatment was out of the question, it being obvious that life, under such circumstances, could not be sustained much longer. It was proposed to puncture the membranes. But, in the first place, the os uteri could not be reached; and in the second, death would probably have been chiefly incident to the operation, so near to death was Mrs. — at Dr. C.'s visit. The *autopsy* showed what was the situation of the placenta. Hæmorrhage must have been the result of the operation above referred to.

From the whole history of the case, is it not probable that it was produced by the various measures which had been adopted to procure abortion? Others were referred to besides those above named, and doubtless together they produced the arterial disturbance, and ultimately the disease which ended in death.

## Art. 120.—*The Hour of Birth in* 2019 *Cases.* By R. U. West, Esq.

(*Assoc. Med. Journal*, Feb. 4, 1853.)

It is generally understood that accoucheurs have "plenty of night-work;" but I am not, says Mr. West, aware that any one has attempted to show in what proportion the night-work preponderates.

| | | First set of 700. | Second set of 700. | Third set of 619. | Total, 2019. |
|---|---|---|---|---|---|
| 8 hours of night. | P.M. 11—12 | 42 | 33 | 37 | = 112 |
| | A.M. 12—1 | 25 | 23 | 16 | = 64 |
| | 1—2 | 43 | 28 | 28 | = 99 |
| | 2—3 | 40 | 37 | 26 | = 103 |
| | 3—4 | 30 | 50 | 24 | = 104 |
| | 4—5 | 29 | 34 | 25 | = 88 |
| | 5—6 | 33 | 37 | 40 | = 110 |
| | 6—7 | 33 | 37 | 30 | = 100 |
| | Total . . | 275 | 279 | 226 | = 780 |
| 8 hours of day. | A.M. 7—8 | 27 | 31 | 28 | = 86 |
| | 8—9 | 29 | 30 | 32 | = 91 |
| | 9—10 | 18 | 29 | 33 | = 80 |
| | 10—11 | 37 | 29 | 33 | = 99 |
| | 11—12 | 31 | 31 | 26 | = 88 |
| | P.M. 12—1 | 26 | 28 | 21 | = 75 |
| | 1—2 | 25 | 26 | 23 | = 74 |
| | 2—3 | 26 | 24 | 19 | = 69 |
| | Total . . | 219 | 228 | 215 | = 662 |
| 8 hours of evening. | P.M. 3—4 | 22 | 25 | 23 | = 70 |
| | 4—5 | 25 | 17 | 17 | = 59 |
| | 5—6 | 18 | 26 | 12 | = 56 |
| | 6—7 | 20 | 20 | 28 | = 68 |
| | 7—8 | 30 | 20 | 31 | = 81 |
| | 8—9 | 33 | 27 | 22 | = 82 |
| | 9—10 | 28 | 28 | 23 | = 79 |
| | 10—11 | 30 | 30 | 22 | = 82 |
| | Total . . | 206 | 193 | 178 | = 577 |

The statistics here given show the hour of birth in 2019 cases which I have attended, and they certainly bear out the popular idea on the subject. In order to prove that the proportions given are not accidental, I have divided the total number of cases into three nearly equal sets of 700, 700 and 619, from which it will be seen that, although there may be some discrepancy when single hours are taken, yet the gross number in each period of eight hours presents a remarkable uniformity. It will readily be understood that these tables give only part of the truth, for some of the births which took place in the earlier hours of the *second* eight hours—"the eight hours of day"—must have involved an *attendance* breaking into the night-hours. Consequently, the eight hours when the smallest number of births took place,—viz., those of "the evening,"—were those least likely to require night-watching.

ART. 121.—*A further Account of Fatty Degeneration of the Placenta, and the Influence of this Disease in producing Death of the Fœtus, Hæmorrhage, and Abortion.* By ROBERT BARNES, M.D.

(*Medical Times and Gazette*, March 19, 1853.)

The author, after referring to a paper published in 1851, thought that the histories of the cases now submitted would be found to throw much additional light upon the pathology of fatty degeneration in an organ in which the existence of this affection had only been recently established. These cases would also, in his opinion, lend confirmation to the view he had expressed of the importance of this affection as a cause of death of the fœtus, of hæmorrhage, and abortion. In the first case, the fœtus had attained apparently the middle period of gestation. The mother had been conscious of the death of the fœtus; she was taken suddenly with slight pains, and the child and placenta all came away together. The placenta, like the child, was free from putrefaction when sent to the author. The maternal surface of the placenta was deeply divided by sulci. Its general aspect resembled that of the brain, both in colour and subdivision. All the lobes had a pale, yellow, glistening appearance, like fat; pink or red in the sulci. In the sulci, between the lobes, there was evidence of the vascular connection with the uterus. With these exceptions, the placenta had an exsanguined appearance. A section showed that the yellow, fatty appearance was much more marked on the decidual surface, while, on approaching the fœtal surface, there was more appearance of blood. There was nothing like fresh, healthy placental tissue. Examined under the microscope, the villi taken from any part near the decidual surface were much altered; those from near the fœtal surface were less altered, but none were found perfectly healthy. The villi in the more consolidated lobes were brittle, misshapen; the vessels breaking up, and losing their defined outline. The chorion was, for the most part, destroyed, and the nuclei in the walls of the vessels were enlarged and crammed with granules. In the less consolidated parts, the vessels retained their proper size and shape. The author's view of the pathology of this case was, that the fœtus perished some time before expulsion. All fœtal placental circulation had, therefore, ceased. The large vessels which still connected the placenta with the uterus were the channels through which an imperfect utero-placental circulation was carried on up to the last. As there could have been no interchange between the maternal and fœtal blood, this circulation must have been simply to maintain a low degree of nutrition in the placenta. Granular degeneration had commenced prior to the death of the fœtus; but the granular conversion of the villi continued to increase after the death of the fœtus, until it had reached such an extent as to cut off so much of the remaining vascular communication as to leave the attachment of the placenta to the uterus any longer impossible; and this gradual arrest of the circulation would explain the fact, that there was no hæmorrhage at the time of labour. The next four cases were similar in general features to the last: abortion taking place from the fifth to the eighth month, the fœtus having died

in utero, and the placenta presenting the characteristic conditions of the fatty degeneration just described. The sixth case was an abortion about the tenth week of gestation. There was some hæmorrhage, and the ovum came away easily. The decidua in this case was very much thickened. On the uterine surface, the oblique vascular openings were distinct, but it was pale, and had a fatty appearance. Numerous granules of oil were seen in the cells of the decidua; the fœtal surface of the decidua presented similar appearances, but the fatty change was less extensive. The seventh case was also an abortion at the early period of pregnancy, and the examination of the parts of the ovum were given in detail. The author believed that these cases illustrated the influence of fatty degeneration in producing abortion, by rendering the villi of the chorion or placenta unfitted for the office of maintaining the nutrition of the embryo; and he thought the following considerations established the doctrine, that fatty degeneration of the placenta was really the cause of abortion:—Firstly, there was no sign in any case of decomposition of the placenta. Secondly, the presence of distinct indications of continued vascular connection between the placenta and the uterus up to the moment of detachment and expulsion. Thirdly, the various degrees of progress of the degeneration in different portions of the same placenta. Fourthly, the obvious commensurate diminution of the vascular connection between the placenta and uterus with the progress of the affection. Fifthly, the almost constant evidence of the death of the fœtus having taken place at some definite, but not remote period. Sixthly, the analogical argument derived from the better known pathology of fatty degeneration in other organs; as in muscular structure of the heart, in the liver, in the kidneys, and in the blood-vessels, exhibiting unequivocally that this change took place during the life of the individual, and that, sooner or later, the resulting disorganisation terminated in death. In conclusion, the author remarked, that fatty degeneration of the placenta was far from being an uncommon event. He exhorted practitioners to the employment of the microscope, as the only means of investigating the abnormal conditions of the placenta. Alterations of structure in elementary tissues could not be recognised without the aid of that instrument; and he confidently believed, that the morbid conditions described by various authors as examples of scirrhous disease, of atrophy, or of tubercle, might, by microscopical analysis, have been demonstrated as fatty degeneration.

### Art. 122.—*On Degeneration of the Placenta at the End of Pregnancy.* By Robert Druitt, M.D.

(*Lancet*, Feb. 12, 1853.)

The subject of degeneration of the placenta had been already brought under the notice of the profession by Dr. Robert Barnes, but before the real value of this subject of investigation could be estimated, the author thought the following questions should be answered—viz., first, how far, and under what circumstances, could it be regarded as a normal condition? secondly, how frequently, and to

what extent, might it be present without any ill consequences ensuing? The author defined the term degeneration to express the loss of those characteristic parts or marks of any given structure which were most intimately connected with its functions. Such a change, Professor Paget had remarked, bore witness rather to a deficiency than to a perversion of nutrition. There was no development of any new organic form; but, instead, a tendency to infiltration with oil-corpuscles or with earthy matter. In structures whose existence was shorter than that of the system of which they formed a part, or in organs which had occasional periods of activity, such changes were met with at the termination of those periods; and it might be produced in any organ by depriving it of the exercise of its functions. Thus degeneration was to be looked upon as a part of the natural as well as of the morbid history of the animal economy. Now, the placenta, being *par excellence* a temporary organ, might fairly be expected to be prone to degeneration at the close of the term of its office; and this the author believed to be true, and that almost every placenta expelled at the full time exhibited some signs of that change. The fact was notorious, that various deviations from perfect structure were constantly found in placentæ; in favorable cases the fact was passed by as of no consequence, but in unfavorable cases, the placenta being more closely scrutinized, these appearances had been attributed to inflammation and effusion of lymph. The author confessed to have fallen himself into the error, till the paper of Dr. Barnes revealed the true nature of these alterations; and being soon convinced that degeneration of the placenta was by no means of uncommon occurrence, he determined to institute a more strict inquiry, the result of which was embodied in the present communication. For the sake of a clear definition of the term employed, the author briefly detailed the histological elements of the placental structure, and thus observed that the forms of degeneration commonly seen in the placenta were the earthy and the fatty. The earthy was so common, that he doubted whether any full-grown placenta could be met with that did not exhibit traces of it. These earthy deposits, examined microscopically, were seen in minute transparent crystals within the investing decidual cells of the fœtal villi. This earthy matter was quickly and entirely soluble in acetic acid, with copious effervescence. The fatty degeneration was as common as the earthy, and was generally met with in the same placenta, though not in the same parts, nor in equal degree. It had been most fully and accurately described by Dr. Barnes and Dr. Hassall, and the author added some minute details of the progress of the fatty deposit in the pre-decidual cells, in which it commenced first as single globules, and then aggregated in clusters in the cells. In some cases the oil did not increase in proportion to the degree of degeneration; in fact, neither the oil-globules nor the earthy crystals were to be looked on as more than accidents, and not as constituting the essence of the degeneration; but whether so or not, the affected tufts became tallowy, exsanguine, brittle, and difficult to unravel; whilst in the extreme stage there was produced a white, glistening, translucent, amorphous substance, of gristly consistence, and breaking in all directions into sharp, angular fragments. But in this apparently struc-

tureless substance the fœtal vessels might, by careful examination, aided by maceration, be detected cropping out here and there on the broken surfaces. In this extreme degree of degeneration there was very little oil. Acetic acid caused the mass to swell up and become translucent. The author then gave the details of the microscopic examination of thirty placentæ occurring consecutively in his own practice; in each, either fatty or earthy degeneration had taken place. He conceived that the true explanation of these phenomena must be looked for in the general analogies which regulate the growth of temporary organs. The placenta was the nutrient organ of a parasite, which inhabited its parent until it had attained a certain degree of development. Its cells, like other cells in the condition of active growth, had the power of appropriating nourishment from any parts with which they were in contact. It was probable that the size and condition of the placenta bore a strict proportion to the wants of the fœtus and to its powers of assimilation, and that, on the one hand, a placenta of perfect structure showed that the functions of the organ were actively carried on; on the other hand, degeneration testified either that the organ was originally formed on an unnecessarily large scale, or that the fœtus could not appropriate the supplies furnished by the entire organ, or that the work of development being nearly completed, the active employment of the whole organ had become unnecessary, and portions of it fell into decay. The author offered the three following conclusions as the result of his investigations:—1. That incipient degeneration was a normal condition of the placenta at the end of pregnancy. 2. That it arose from partial cessation of the active functions of the organ when the fœtal development was nearly completed. 3. That when it occurred in the earlier months, it probably arose from some antecedent want of nutritive force in the fœtus, or by its death. On the subject of inducing premature labour, on the ground of placental disease, the author summed up his communication in the emphatic words of Wilde:—"Nostrum est, summo studio cavere, ne abortus expediatur vel immo excitetur, sed omni arte potius intendere ut prospera et immunis restituatur graviditas; quippe quâ unâ, duplicis vitæ, lætam spem et sinceram salutem recuperavimus."

### Art. 123.—*Practical Observations and Statistics of Forceps Operations.* By Dr. Arneth.

(*Medico-Chir. Rev.*, Jan. 1852.)

In the 6608 births, the forceps were resorted to 45 times, or once in 146 births. Boivin employed them once in 214; Lachapelle, during 1803-11, once in 168, and during 1812-20, once in 288. Collins employed the forceps and lever (which last M. Arneth makes no mention of employing) once in 574 cases, and M'Clintock and Hardy resorted to the forceps once in 279, and to the lever once in 378 births—viz., to either forceps or lever in 42 out of 6702 births, or once in 159½. Boer used the forceps once in 251 births, Klein once in 48, Bartsch once in 72. The two latter practitioners are the

directors of the Vienna lying-in establishments; and it will be observed, that Dr. Arneth's own forceps operations are proportionably far less than theirs, viz., 1 in 146. Adding together the cases recorded by all the above-named observers, we find, that in 168179 births, the forceps were employed 1289 times, or once in 130 births.

In 28 of the author's 45 cases, the forceps were applied simply for deficient pains, in 5 for the same cause united with slight pelvic narrowness, 3 times for moderately contracted pelvis, 5 times for eclampsia, once for eclampsia and hæmorrhage, once for a prolapse of the funis and hand, once for the prolapse of the arm with the head, and once for the delivery of the head in a breech-presentation. Of the children, 31 were born living (7 dying within a few days), and 14 dead.

In *deficient pains,* when the necessity of having recourse to the forceps is feared, endeavours are made to excite uterine action by the application of vapour to the parts. The patient is seated comfortably in an arm-chair having an aperture in the seat, under which a vessel containing hot water is placed, her feet being supported by a stool placed within the vessel. The whole is surrounded by a cloth, so as to prevent the escape of the vapour. She remains so seated until the pains augment in severity, or until she feels fatigued; and if, on her return to bed, the pains again diminish, the vapour bath is not unfrequently repeated. Although this bath undoubtedly induces a softened and yielding condition of the parts, Dr. Arneth is disposed to attribute its quickening power upon the pains as much to the assumption of the erect posture as to the influence of the vapour. When the os uteri is very unyielding, cloths dipped in warm water are kept applied to the external parts, by the hour together, if necessary; and if this has no effect, the patient is placed in a tepid hip-bath, which often proves of the highest utility. If the dilatation of the os has been thus obtained, and yet the pains do not follow, the vapour bath just alluded to is employed. Dilatation of the tense os uteri by the hand or by instruments is never practised. The *secale cornutum*, as a means of exciting pains, is very rarely employed; and it seems to us that Dr. Arneth by no means appreciates the utility of this valuable drug in the various emergencies under which it is employed here. This may arise from his giving only 5-grain doses every five minutes, until half a drachm has been taken. If he gave the half drachm altogether, and repeated this dose in half-an-hour, if requisite, we believe his opinion as to the power of the remedy would undergo some change. It is by no means our wish, however, to urge the more frequent employment of the ergot among ourselves; as we feel convinced that it has been, and is, from ignorance and impatience, far too frequently resorted to, both in England and France; and that many examples of infantile asphyxia are due to its injudicious administration. While, therefore, we maintain its great power for good or evil, accordingly as its exhibition is prudently resolved upon or not, we are glad to put prominently forward some of the above-named substitutes in use among the more cautious and more leisurely practitioners of Vienna.

Very different is the result of the application of the forceps for

mere deficiency of pain, and for even only a moderate degree of *contraction of the pelvis.* Of the 8 mothers in whom the latter existed, only 2 could be dismissed at the end of the ninth day, like the other women; 1 was attacked by cholera, 1 suffered from urinary fistula, 2 suffered from puerperal fever, but recovered, and 2 died. On the other hand, of the 28 women in whom the forceps was only resorted to on account of defective pain, 23 left the establishment at the end of the ninth day, 3 fell ill, but recovered, and 2 died.

Dr. Arneth never resorts to the "long forceps," the instrument he employs measuring 15 inches. He especially cautions against the movement of the instrument towards the sides of the pelvis during traction, for although this may sometimes hasten the progress of delivery, it does so at the expense of the soft parts of the mother. He cannot sufficiently express his astonishment at finding that all the writers whom he has consulted, direct a pendulum or rotatory traction to be employed, and insists that this should be made direct, simultaneously with the pain, when possible, and with uninterrupted and increasing force, so long as the operator's strength allows. In this way much more is done than by occasional violent pulls, and the instrument is held more securely in the operator's power. The author has met with no instance of *separation or loosening of the pelvic symphyses*, stated by Scanzoni as a frequent consequence of the employment of the forceps in a narrow pelvis. One interesting case of this kind following a forceps operation, he relates; but in this the forceps were resorted to (under the same circumstances that most practitioners in this country would give ergot) for a deficiency of pain, notwithstanding complete dilatation. They were applied with great ease, and four or five tractions completed delivery. Soon after the delivery, the patient complained of pain in the left inguinal region, and afterwards along the whole course of the ischiatic nerve. There was no tenderness of the abdomen, except over the symphysis pubis; but excessive pain was complained of on moving the hip-joint, and deep-seated fluctuation was perceptible external to and above the ischiatic tuberosity. The last week prior to her death, she complained of excessive suffering near the left acromion. Delivered on the 26th of October, she died on the 6th of November. Much yellow purulent exudation was found between the bladder and symphysis, and the periosteum of the horizontal ramus of the pubis was loosened. The fibro-cartilage of the symphysis was in part destroyed, in part infiltrated with the above exudation. The symphysis was so separated that nearly an inch intervened between the ends of the bones, which were also roughened; within the left shoulder and hip-joints, greenish yellow pus was found. The uterus was lined with a darkish exudation, a few drops of pus being observed where the placenta had been attached. Several small darkish-coloured, fissure-like wounds of the cervix uteri, and one in the vagina, were observed.

## Art. 124.—*Cases of Placenta Prævia.* By Charles Waller, m.d., Obstetric Physician to St. Thomas's Hospital.

(*Medical Times and Gazette*, Dec. 4, 1852.)

During the present month, writes Dr. Waller, I have been called to two cases of complete placental presentation, similar, in some respects, in their general character, but very dissimilar in their results. Both females had borne children, were about the same age, and were delivered on the same day, within a few hours of each other. In the one case, there had been hæmorrhage, at intervals, for many days previously, without any decisive symptom of labour, and at length sudden prostration supervened, terminating in death very speedily after delivery, without the slightest appearance of rallying. In the other, although the immediate loss of blood was much more sudden and profuse, the constitutional powers were unimpaired, and during the process of delivery there was no syncope,—indeed there was hardly an approach to that condition.

*Case* 49.—Nov. 5, 2 p.m., I was requested to visit a patient who was "apparently dying from hæmorrhage." She had originally been under the care of Dr. Leonard, who was engaged to attend her, but who was absent from town in consequence of ill-health. I was informed by his *locum tenens* that there had been occasional drains of blood for the past three weeks without the slightest symptom of labour; that, a short time previous to my arrival, very sudden and alarming exhaustion had supervened, without much loss of blood externally. Her countenance was death-like; pulse scarcely perceptible; surface of body cold. On examination, the vagina was full of clotted blood, and the placenta felt to be attached completely around the os uteri internally. Although there were no decided labour-pains, there was considerable dilatation; the hand was, therefore, passed on, the placenta thoroughly detached, the feet grasped, and a dead child removed. The mother survived for about ten minutes only. The female was about 41 years of age, and had given birth to several children previously.

*Case* 50.—Nov. 5, 11 a.m., I was requested to see a patient of Mr. Austen, of Red Lion-street, Clerkenwell. Mr. Austen informed me that this lady was 36 years of age, had been married and borne children; was then a widow for three years, and had since married again. She was a person of very active habits, and had been bustling about as usual until the previous evening. During the night she was alarmed by a sudden gush of blood, the flow continuing pretty freely ever since at intervals. The bedclothes were saturated with blood, but the patient's countenance was good, the pulse but little affected, and her manner cheerful. The presenting part was high in the pelvis, and, therefore, not distinguishable until the whole hand had been introduced into the vagina. The os uteri was not sufficiently open to allow of the passage of the knuckles; the placenta was, therefore, entirely detached from its uterine connection by the fore and middle finger of the right hand, after which the flooding entirely ceased. Cautious attempts were then made to dilate the os uteri, and after a short delay, the entire hand was passed onwards, and the right shoulder discovered to be the presenting part; the feet were sought for, and easily found, and a dead child delivered. No unfavorable symptom was observed afterwards.

## Art. 125.—*A Case of Transfusion of Blood after Flooding.* By Mr. Turner, of Minchinhampton.

(*Lancet*, Feb. 28, 1853.)

The subjoined case illustrates the benefits resulting from this measure, though unfortunately the success was not as complete as might have been desired:—

On Monday, Dec. 13th, I was summoned to see Elizabeth C—, aged thirty-nine, in labour with her ninth child. She was a short, strong built, muscular woman, and had been in labour many hours. About two months previously two of her children were run over by a waggon, and one of them sustained a fracture of the thigh. She says she thought she should have been confined at that time, as the fright brought on severe labour-pains attended with a considerable discharge of water. She thinks the shock to her system, in consequence of the accident, caused the situation, or rather the position, of the fœtus to be changed; be that, however, as it may, certain it is, that on my making an examination I discovered the hand presenting. This I returned, and, after some difficulty, I succeeded in bringing down one of the feet, and in due time delivered her of a very large child. As the placenta was not readily thrown off, and as the womb was well contracted, I thought, under the circumstances, it would be better to use no force; I therefore left her under the care of the midwife who was in attendance, and desired her, in the event of any symptom occurring requiring my attendance, to dispatch a messenger to me. Hearing nothing of the case after a lapse of several hours, I considered all was going on well, and I proceeded to visit a patient eleven miles off, who was very desirous of seeing me. On my return home in the afternoon, I found several urgent messages had been forwarded to my house, and in consequence I lost no time in visiting the woman. I was much alarmed at the condition in which I found her. Her countenance was anxious and pallid, her lips bloodless, and not a vestige of pulse to be felt at either wrist; the voice was low, she complained of a load upon her chest, and there was a constant disposition to syncope. In consequence of my absence from home, Mr. Wells kindly supplied my place, and removed the placenta, which was firmly adherent. She had lost a good deal of blood, but this had ceased on my arrival. Mr. Wells had given her brandy, and applied hot bottles to her feet; he said, however, that he could detect no pulse at the time of his visit, neither could I an hour or two later, notwithstanding she had had a good deal of brandy-and-water. It was clear we had to contend with a very desperate case—that life was fast ebbing; and there seemed to be nothing left to be done but the operation of transfusion. Doubtful as the remedy was, Mr. Wells agreed with me in the propriety of trying it. I therefore had up the husband, and explained to him that his wife was sinking from loss of blood, and that the only chance remaining for her was supplying this loss by throwing some blood into her system, and that for this purpose it was requisite that I should abstract some blood from him. To this he consented. Having made an opening into the vein of the right arm of the woman, I took a brass syringe capable of holding about three ounces. This I warmed by means of hot water; I then opened a vein in the arm of the man and received the blood into the syringe. I inserted the ivory point of the syringe; but, perhaps from the opening in the vein being too small, the stream got under the cellular tissue. I therefore cut down upon a vein in the other arm, and, with a syringe full of fresh blood, I directed the stream upwards. This appeared to do very well, and in about a quarter of an

hour afterwards Mr. Wells thought he could discover a very faint pulsation. Still her condition was anything but promising; and, indeed, at one time during the operation, both Mr. Wells and myself thought she was gone. When her husband came to her, she said she never had such feelings before, and she was certain she was dying. However, I persevered in giving her hot egg-tea, with brandy, and occasionally port wine, (as she liked the latter the better of the two,) and incessantly applied the smelling bottle to her nostrils, also taking care to keep the feet warm by means of hot water. I also gave her a cordial mixture, containing chloric ether, and which certainly was very useful. She got through the night better than could have been expected, and the next morning she was decidedly better; she spoke more audibly, and there was some strength in the beat of the carotids; the pulse admitted of numbering, but was very weak indeed; and, although much exhausted, that disposition to syncope had entirely disappeared, and the tympanitic state of the bowels, which was so observable yesterday, to-day was much diminished. She passed no urine for thirty-four hours after her delivery, which made me anxious; this secretion, however, was restored, and for four days nothing could be more satisfactory than her progress. On the fifth day, her appetite was good, she felt stronger, and in all respects appeared to be going on well, with the exception of a hard boil on the back of the left forearm. This had been coming for a fortnight previous to her confinement, but had only become troublesome to-day. Each day this became harder and more extensive and inflamed, till at length the limb became so large and painful, from the tip of the fingers to the shoulder-joint, that she could obtain no rest; she became feverish, lost her appetite, her breath got short, and on the 23d of December, ten days from her confinement, she died. I should state that I cut deep and completely through the carbuncle, and with decided relief; the pain, after this incision, was much subdued, or, to use her own expression, I had "cut away the pain." There was scarcely any blood followed, and the sensation was that of cutting through brawn.

I should have been glad had the woman have lived; nevertheless, she survived sufficiently long for the operation to be pronounced thoroughly successful; her death arose quite from extraneous causes.

## Art. 126.—*Observations on the Induction of Premature Labour before the Seventh Month of Pregnancy.* By Dr. Robert Lee, F.R.S.

(*Medical Times and Gazette*, Feb. 19, 1853.)

In the year 1812, in the third volume of the "Medico-Chirurgical Transactions," Dr. Merriman had published a paper entitled "Cases of Premature Labour Artificially induced in Women of Distorted Pelvis, to which are subjoined some Observations on this Method of Practice." The author thought it significant that in thirty-two volumes of the "Transactions," embracing a period of forty years, there did not occur the history of a single case to illustrate this important rule of practice; while in these volumes there were reports of ten cases of Cæsarian operation. Of the safety, efficacy, and morality of inducing premature labour, in conformity with the rules inculcated by Dr. Merriman, the author thought most British and some foreign practitioners were convinced; but in respect to the induction of premature labour before the seventh month and in first pregnancies, to obviate the danger of craniotomy and the fatal effects of the Cæsarian section, in cases of

great distortion of the pelvis, little had been said by writers on midwifery. To justify the practice, which the author regarded as equally safe, efficacious, and moral, before as after the seventh month of utero-gestation, and in a first as in any subsequent pregnancy, he submitted the history of a successful case, which was attended with peculiar complications and formidable difficulties. In October, 1849, with Mr. Booth, of Queen Street, Westminster, he saw Mrs. S—, who had been in labour forty-eight hours, and whose pelvis was distorted in the highest degree from mollities ossium. After perforating the head, which had not entered the brim of the pelvis, and, by tearing in pieces the bones with the crochet, delivery was accomplished after two hours' violent exertion. The partially dilated state of the os uteri greatly increased the difficulty and danger of the operation. The patient recovered without any unfavorable symptom In December, 1852, the author learned from Mr. Booth that the patient was again pregnant; and in the fifth month, some diagnostic symptoms of pregnancy being absent, any interference was postponed for another month. In January, 1853, the movements of the fœtus could be distinctly felt, and the necessity for immediately attempting to induce premature labour was obvious and urgent. The great distortion of the pelvis (the tuberosities of the ischia were almost in contact, and the sacrum projected forward so as nearly to touch the front of the pelvis) presented unusual difficulties, seen in reaching the os uteri for the purpose of introducing the stiletted catheter to puncture the membranes. After a time, the fore and middle fingers of the left hand were passed into the vagina, and the anterior lip of the os uteri was touched with the tip of the forefinger; the instrument was then guided into the cavity of the uterus, and the membranes punctured. The liquor amnii continued to flow till the morning of Friday, the 7th of January, when labour pains came on. At two, p.m. the os uteri was so much dilated, that the points of two fingers could be introduced, and the nature of the presentation ascertained. It was not the head, but whether shoulder or nates could not be determined. At seven, p.m. the right hand was hanging out of the external parts, and the shoulders and thorax had sunk deeper into the pelvis. On a careful examination, it was found that the tuberosities of the ischia had been pressed considerably apart, the short diameter of the outlet being thus increased; and there was little doubt, but that the bones at the brim had also yielded somewhat to the pressure. The shoulder being brought down as much as possible, the viscera of the thorax were removed by the crotchet; and, after fixing its point in the spine as near as possible to the pelvis, after strong traction, the nates and lower extremities were drawn through, and the other superior extremity soon followed. But little difficulty was experienced in crushing or extracting the head. The placenta soon followed. Three weeks after the delivery, the author received a satisfactory communication from Mr. Booth, stating that the patient had progressed very favorably.

ART. 127.—*On the comparative advantages of Cæsarian Section, and Premature Abortion.* By Professor HUBERT, of Louvain.

(*Lancet*, Nov. 20, 1852.)

This statistical evidence is taken from a review of Professor Hubert's pamphlet.

The results of the Cæsarian section are to be regarded from two different points of view: first, as regards the safety of the mother; and secondly, as concerns that of the infant. *As showing the chances given to the mother* by this operation, we have the following table:—

*Results of the Cæsarian Section.*

| From the Statistics given by | No. of Cases. | Deaths. | Recoveries | Per Cent. of Deaths. |
|---|---|---|---|---|
| Baudelocque, (from 1750 to 1816) . . . | 73 | 42 | 31 | 57·53 |
| Michaelis, (from 1801 to 1832) . . . . | 110 | 62 | 48 | 56·36 |
| Velpeau, (from 1700 to 1835) . . . . | 265 | 147 | 118 | 55·47 |
| Sprengel, (the 18th century) . . . . . | 106 | 45 | 61 | 42·45 |
| Simonart „ „ . . . . . | 720 | 424 | 296 | 58·88 |
| Kayser, (from 1750 to 1835) . . . . . | — | — | — | 79·00 |
| | 1274 | 720 | 554 | 58·28 |

Some good practical remarks are then made, showing that the chances of success vary according to the time selected for the operation: thus, when practised before the lapse of six hours from the rupture of the membranes, 20 women out of 39 have recovered, being 51·28 per cent.; after six and before twenty-four hours have elapsed, 14 women out of 35 have been saved, or 40 per cent.; while in cases not operated upon until beyond twenty-four hours from the escape of the liquor amnii, there have only been 13 recoveries in 28 cases, or 34·21 per cent.

*As regards the effect upon the infant*, it has been stated by M. Michaelis that in 110 cases the child was born alive in 63, in 4 very feeble; in 29, dead; the remaining 14 are unaccounted for. But of course, if the time which has elapsed between the rupture of the membranes and the performance of the operation has an effect upon the mother, it has a still greater influence upon the child; and we find, that when less than six hours have elapsed 34 infants out of 37, or 92 per cent., have been borne alive: when more than six, and less than twenty-four hours, 25 infants of 32 or 78 per cent.; while in those instances in which the operation was delayed until more than twenty-four hours after the rupture of the membranes, only 19 children out of 37, or 51 per cent., were saved.

The conclusion to be derived from these statistics, therefore, is "that the Cæsarian operation saves the life of one woman in two, and of nine infants in ten."

With these results, as regards this severe operation, let us see the effects which flow from the induction of premature labour:

*For the fœtus*, it is "either direct death, or at least it is born in such a condition that it cannot continue to live."

*For the mother*, the operation is safe in 19 cases out of 20. A pregnant

woman, therefore, with such deformity of the pelvis as will prevent delivery at the full term, is placed, according to our author, in the predicament of having to determine:

"1st. Whether she will wait until the end of the usual term of pregnancy, and submit to the Cæsarian section, performed at the most fit time, and thus secure to herself an equal chance between life and death, with nine chances in ten of saving her child:

Or, 2d. Whether she will have premature labour induced, and by the almost certain sacrifice of her offspring, secure her own safety by nineteen chances in twenty."

### Art. 128.—*Cases of Cæsarian Section.*
### By M. Decæne, of Courtrai, Dr. Waller, and others.

(*Gazette des Hôpitaux*, No. 147, 1852; *Medical Times and Gazette*, March 12, 1853; *Schmidt's Jahr.*, No. 3, 1853; *New York Journal of Medicine*, Jan. 1853.)

1. The case of M. Decæne is one of extraordinary interest. The patient had been already twice subjected to the Cæsarian section, and on the present occasion her danger was exaggerated by rupture of the uterus; and yet in spite of everything she recovered without a single untoward symptom. The patient, it appears, had been first pregnant in 1844, when she was delivered by craniotomy. In 1845 she was delivered of her second child by the Cæsarian section, after an abortive attempt with the crotchet. In 1849 her third child was born by means of the Cæsarian section. Any case of M. Decæne deserves particular attention from the remarkable success which has followed the operation in his hands. He has operated, it appears, seven times,—successfully for the mother in six instances, and for the child in four instances. Indeed, where the children were dead they had died before the operation. These cases occurred respectively in 1841, 1843, 1844, 1845, 1849, and 1852. (*Gaz. des Hôpitaux*, No. 56, 1852.)

Case.—The case occurred at Bissegham, on the 5th of November, 1852, in a poor rachitic woman, called Duprez. Labour had been in progress about forty hours. On the evening of the previous day a severe lacerating pain had been felt in the region of the uterus, followed by syncope, vomiting, and a discharge of blood from the vagina, after which the movements of the fœtus and all proper labour pains had ceased entirely. There was considerable tenderness over the whole abdomen, through the walls of which the child could be distinctly felt. The neck of the womb was soft, and the mouth dilated to the size of a five-franc piece; but nothing could be felt presenting within the mouth. The waters had not escaped. The vital powers of the patient were scarcely shaken, and there was a remarkable amount of moral courage.

Under these circumstances the Cæsarian section was proceeded with, as soon as the bladder had been emptied. On opening the peritoneum a considerable quantity of dark half-clotted blood escaped, and a fœtus enclosed in its perfect membranes and fluids, with the placenta attached, was found lying loose in the cavity of the peritoneum. This fœtus was forthwith extracted, care being taken to evacuate the amnial liquid, so that it did not escape into the peritoneal sac. After this a second fœtus, similarly detached and circumstanced, was found to exist; and this was removed in the same manner. Both infants were dead.

The uterus was about the size of the fist, with a somewhat irregular gaping laceration on its anterior surface, corresponding as nearly as possible in position with the cicatrices of the former operations. The structure of the uterus seemed healthy, though somewhat thinner than usual at the lacerated part. The peritoneum and intestines were not injected.

The next day no untoward symptoms had shown itself, and the patient complained that she was kept in bed, and with less food than she wanted; and so also on the next day, and the days following; and on the 24th of the month she was quite well.

2. Dr. Waller's case occurred in the practice of Mr. Evans of Blackfriar's Road, on the 1st of Feb. 1813. It is given in Dr. Waller's own word, and with as little abridgment as possible.

The age of the female was 41; she had been married about fifteen months, had twice miscarried, but had now arrived at the ninth month of gestation; her mother was of delicate habit, and died in childbirth at an early age, leaving, however, several healthy children. Mr. Evans had visited her about a month since, in consequence of a slight hæmorrhage, which was speedily subdued, no vaginal examination being required. She was now the subject of a slight bronchial attack, which produced a sharp teasing cough, with tough, viscid expectoration.

Mr. Evans was called on Saturday, Feb. 5th, on which day slight labour pains occurred for the first time, although the liquor amnii was said to have been discharged on the 3d inst. The uterine paroxysms were slight, the intervals between them long, the waters gradually dribbling away. On examination, Mr. Evans detected what appeared to be an appalling degree of pelvic deformity, almost entirely closing up the brim of the pelvis. Through this narrow passage, two fingers could with difficulty be introduced; no os uteri could be felt, neither could the precise presentation be discovered. It did not, however, appear to be the head. The pains being slight, and no constitutional disturbance present, Mr. Evans determined to watch the case for a while, in the hope that the child might descend, and thus enable him to ascertain with more precision the presenting part. There was little alteration in the symptoms until this evening (Feb. 7th), when the pains increased somewhat in force; but there was still no 'bearing down.' On my arrival, I found the female in a tolerably tranquil state, the circulation not much hurried, the skin natural; the breathing, however, difficult, and the cough troublesome. On an external inspection it was apparent that the entire uterus was excluded from the pelvis, forming a very abrupt oval prominence in the middle of the abdomen, over which the parietes were tightly stretched. A line drawn in the direction of the linea alba from the umbilicus to the symphysis pubis measured nine inches. On examination per vaginam a tumour of bony hardness was felt nearly blocking up the entire pelvic cavity; from its hardness, immobility, and *apparent* connection with the sacrum (for we could not separate the one from the other by pressure) my impression was, that Mr. Evans's diagnosis was correct. As it was perfectly clear that no child, however mutilated, could be brought through the natural passages, that nothing short of an abdominal section would be sufficient for the patient's relief, it was determined to avoid unnecessary manipulation, lest injury should be inflicted on the soft parts. The space between the anterior portion of the tumour and symphysis pubis was precisely $1\frac{3}{8}$ inch, whilst the lateral diameters were also greatly encroached upon. In the present condition of the patient, my opinion was decidedly opposed to her removal from her own habitation. The weather was cold, and her apartment convenient, comfortable,

and, above all, very warm. It was therefore, determined with the consent of the patient, and concurrence of the husband (after explaining to them the formidable nature of the case), that the Cæsarian section should be immediately performed in the apartment where she was then lying.

Mr. Le Gros Clark was sent for, and, in the short interval which elapsed prior to his arrival a common enema was administered, and the urine drawn off by the catheter. The temperature of the room was kept up, and care taken to exclude all draughts of cold air. Some lines were drawn on the abdomen, with tincture of iodine, transversely to the direction of the intended incision, to serve as a guide for the future opposition of the divided parts.

The patient was then placed on a high table, the legs hanging over one end, and the head and shoulders well supported at the other. Mr. Evans took his station on her left, and was directed to place one hand on each side of the abdomen after the opening had been made, to keep up a steady pressure during and after the removal of the child, for the purpose of preventing the escape of the viscera. A friend of Mr. Evans took charge of the legs, while Mr. Fernie, acting as Mr. Clark's assistant, supplied him, from time to time, with ligatures, and whatever was required during the operation. My own position was on the patient's right, that I might be in readiness to remove the child and placenta as soon as the uterus was opened, Mr. Clark standing a little below me.

At this time the uterine efforts were rather more frequent, the pulse slightly accelerated, and somewhat deficient in power, though not to any considerable extent. An attempt was made to exhibit chloroform in the usual manner, but the sense of suffocation and constantly threatening cough rendered it necessary to desist before its full effect had been produced.

A vertical incision, about seven inches and a half in length, was made along the middle line, extending from just below the umbilicus to within an inch and a half of the symphysis pubis. By this incision, the integuments, with their subjacent cellular tissue, were divided, and the linea alba fairly exposed. A small opening, just sufficient in size to admit the finger, was made through the lower part of the linea alba; into this aperture a blunt-pointed bistoury was introduced on the fore part of the index-finger of the left hand, and carried upwards to the umbilicus. By this section the entire linea alba was divided to the extent before mentioned. On the retraction of the muscles, the parietal peritoneum was found still covering the uterus like the sac of a hernia. This was accidental, not intentional; the very ready way in which the serous membrane separated from the linea alba, giving at first the impression that the sac of the peritoneum had been entered. The division of this membrane was instantly effected, when the uterus was fully exposed to view. This organ was then opened, a small incision into its cavity having been first made, and the finger introduced, to ascertain whether the placental attachment would interfere with the proposed incision; this not being the case, the opening through the anterior wall of the uterus was enlarged to an extent sufficient to allow the passage of the child in the same manner as the division of the linea alba, *i. e.*, with a blunt-pointed bistoury resting upon the ungual phalanx of the forefinger. The removal of the fœtus and placenta was easily and speedily effected; one of the buttocks had been the presenting part. The child, though at first showing no signs of life, was resuscitated by the usual means, namely, friction, artificial respiration, &c. These means were vigorously adopted by Mr. Fernie, to whom the child (a female of normal size) had been transferred after its separation from the mother. A free gush of blood followed the detachment of the placenta, after which the uterus contracted, though feebly, and no further hæmorrhage took place.

Up to this period, the operation had proceeded without any interruption whatever; but, unfortunately, at this moment the patient was seized with an irrepressible fit of coughing, in consequence of which, notwithstanding the utmost caution was taken to prevent such an occurrence, the intestines were forced out *en masse*. This occurred thrice, and, as vomiting was also induced by the attempt to expectorate, it was thought better, after clearing away the extravasated blood, at once to close the opening, although the uterus had not satisfactorily contracted itself, the cut edges of its parietes remaining much everted. The integuments were accurately brought together, and secured by means of the interrupted suture, an aperture sufficient to allow the escape of any discharge being left at the lower extremity of the wound. A pad of lint was placed along the line, of suture, secured by broad transverse strips of adhesive plaster, and the whole supported by a broad abdominal bandage. The patient was then carefully placed in bed on her back. Scarcely any blood was lost, with the exception of the gush which followed the extraction of the placenta. The pulse did not appear to be affected during the operation.

The patient had a severe fit of shuddering on being removed to her bed, and complained of great coldness. The temperature of the body did not appear to the touch to be reduced, the skin feeling comfortably warm. She was wrapped in a blanket, and tinct. opii, ʒj, given in a little water. The remedy soon influenced the system; there was drowsiness, and doubtless there would have been sleep, had not the cough been harassing and almost incessant for the space of two hours. About this time (2 a.m.) she complained much of her position, and expressed a wish to be turned on her side. Mr. Fernie, who kindly remained with her during the night, thinking that the cough might be alleviated by change of posture, very carefully placed her on the left side, the back being well supported by pillows, almost immediately after which she fell asleep, and scarcely awoke until nine o'clock. Hyd. chlorid., gr. iss; pulv. opii, gr. i, in the form of pill, had been given every three hours, commencing at one o'clock, a.m.

Feb. 8.—Awoke at nine o'clock, much refreshed by her sleep, but complained of thirst; pulse 120, full, and sufficiently powerful; skin very moist and warm; no abdominal tenderness; cough troublesome; great desire to expectorate, but inability to do so. There is a clear viscid discharge from the wound, without any admixture of blood. The lochia pass through the vagina. Wine and water and toast-water were administered during the day, the former cautiously, the latter freely; the pills continued through the day. Towards evening, the cough remaining very troublesome, a small blister was applied to the chest, and an expectorant mixture ordered. 11, p.m.—Not so well. Countenance anxious and flushed; expresses a strong conviction she will not recover. Tongue covered with brown fur; pulse more feeble. There has been no more rigor; no pain or tenderness in the abdomen. At 12, p.m. the bladder was emptied, about six ounces of urine having been removed. Mr. Fernie has been with the patient the greater part of the day, and will again watch her during the night.

9th, 2, p.m.—Remains very thirsty, and occasionally wanders; has no pain, and still continues to doze. At 4, p.m., she took a pill, and again was soon apparently dozing. At seven o'clock there was a sudden change for the worse; the pulse increased in frequency, but diminished in force; the countenance became pallid and anxious; the lower jaw dropped; the lips livid, and the power of deglutition was nearly suspended; a cold clammy sweat broke out on the face; in short, the symptoms seemed to indicate immediate dissolution. The patient was partially raised in bed, and brandy and ammonia liberally given. This was presently followed by a marked amelioration of

these death-like symptoms; the pulse increased in fulness; consciousness returned, so that she addressed her husband quite rationally. A teacupful of arrowroot was now given her; there was no abdominal uneasiness; complained much of thirst, and craved for toast-water. This rally was of short duration, about nine o'clock she began again to sink, and, notwithstanding the exhibition of stimulants, no reaction took place. The patient survived until a quarter past one, p.m., when death terminated her sufferings, thirty-six hours after the performance of the operation.

*Autopsy.*—The body was examined twenty-four hours after death. On removing the bandage and plasters, the length of the incision was found diminished to six inches, from the contraction of the wound, which was most healthy in appearance. Adhesive matter had been effused along the upper half of its course. No peritoneal effusion had taken place, neither were there any marks of inflammation of that membrane. No clot was found in the abdominal cavity. The edges of the incised uterus were much everted. This organ was now carefully removed. As soon as it was raised, a fibrous tumour of considerable size was seen occupying the fundus of the uterus. On the left side of the fundus another but smaller tumour had developed itself, having a pedunculated structure; there were also three or four smaller nodules in its neighbourhood. As the uterus was further raised, its whole posterior surface was found enormously thickened by fibrous deposit, and a large pedunculated tumour, nearly equal in size to the head of a small fœtus, occupying the whole of the pelvic cavity anterior to the sacrum. This large mass had been developed on the left side, behind the os uteri, and had descended between the uterus and vagina. It was exceedingly hard and firm, and had given rise, during life, to the supposition that it was bone. Around the base of this tumour were several nodules of smaller growth.

The ovaries were perfectly healthy. A portion of the tumour has been microscopically examined by Dr. Bristowe and Mr. Rainey, both of whom pronounce it to be of a true fibrous character, corresponding in structure with the uterus itself. The increased development of muscular fibre during the period of utero-gestation rendered the microscopical examination more satisfactory, and the demonstration more clear, than when portions of these growths taken from the unimpregnated organ have been submitted to such inspection.

The child has been supplied with a wet nurse, and is doing remarkably well.

From a careful review of the case, I cannot but think that our patient would have had a tolerably fair chance of recovery, had it not been for the unfortunate complication of her bronchial affection, although with such a diseased condition of uterus, her life might not have been prolonged to a very lengthened period.

The two next cases occurred in Germany, and are reported, the one by M. Harnier, in the 'N. Ztschr. f. Geburtsk.,' xxxiii, 1, 1852; the other by M. Chiari, in the 'Wiener Ztschr.,' viii, 9, 1852. Our abstract is translated from the short account in 'Schmidt's Jahrb.,' No. 3, 1853. The precise dates are not given.

3. *M. Harnier's case*, which was successful both to mother and child, occurred in a woman, aged 36, whose pelvic passage was almost entirely obliterated by rachitic distortion of the bones. Chloroform was used. Little blood was lost. Neither opium, nor calomel, nor nitre, nor ice were employed in the treatment; indeed mild and occasional enemata were the only remedial

means required. The mother herself nursed her child, which was well developed and strong; and in fourteen days she was quite convalescent.

4. *M. Chiari's case* terminated unhappily both for mother and offspring, which were twins. The patient had had four difficult labours previously, but after the last the pelvic passage had become almost entirely obliterated by osteomalacosis. The operation was performed under choloform, and the twins removed in the usual manner. There was some little delay, in consequence of an obstinate though inconsiderable hæmorrhage. The poor woman sank in thirteen hours, one of the children on the third day, and the other on the fourth.

5. The last case is one in which Dr. Owens, of Boston (U. S.), operated after the death of the mother and recuscitated the child from apparent death. The patient was 32 years of age, the mother of three children, and phthisical.

When I arrived, says Dr. Owens, the friends stated that the patient had been dead some minutes, and they were anxious about the child. She had been attacked with a severe fit of vomiting, which terminated in large gushes of blood in quick succession, till it had filled a large chamberpot, and she sunk exhausted in a shorter time than it takes to relate it. I felt her wrist and heart, and held a glass to her mouth, but no evidence of vitality existed. She was in the last month of pregnancy, and some woman present had felt the child moving. I hurried to my office for instruments, and when I returned and found no change, I immediately performed the Cæsarian section through the linea alba, and extracted from the uterus a male child of eight months, and apparently lifeless. I put it immediately into warm water, inflated the lungs, applied stimulants to the nose, &c. &c. About fifteen minutes after the operation, pulsation commenced, which extended along the cord about eight inches from the abdomen, very feeble at first, but gradually gaining force, and inspiring hope and encouragement to continue our efforts to increase the little life it had. After an hour's persevering efforts, it gasped once, then again, and a few minutes after the heaving of the little chest denoted the perfect establishment of the respiratory function. I had it wrapped up warm in cotton wool and flannel, and kept near the fire. About three hours after the operation, it began to cry pretty strongly. It is now seven weeks old; it nurses and feeds well, and is thriving fast. It weighed five pounds when born, and now weighs eight and a half pounds.

## Art. 129.—*Morphia and Chloroform in Puerperal Convulsions.* By Mr. Bolton.

(*Lancet*, Jan 29, 1853.)

The following case deserves to be placed on record from the light it helps to throw upon the true treatment of convulsions:—

Elizabeth ——, aged twenty-two, unmarried, at the full period of a first pregnancy, healthy, but for some time past in a desponding way, was seized Jan. 9, at 4, a.m., with pain in the head and loss of vision. At 8, a.m., writes Mr. Bolton, I was summoned in time to witness a severe convulsive paroxysm, attended with stertor, lividity of countenance, and apparent impending suffocation. Twenty ounces of blood were drawn from the arms, and the cold douche unsparingly used to head and shoulders. In ten minutes she was calm again, the pulse reduced in tone, 100. On examining the os uteri, it was felt high,

slightly dilated, and extremely rigid. The mere introduction of the finger sufficed to bring on the convulsions, which recurred again and again, with intervals of five or ten minutes, the whole muscular system participating in the spasms.—11, a.m.: Paroxysms continue, and she is with much difficulty restrained. At the suggestion of my father, two drachms of Sol. Morph. Ph. L. were given, producing an hour's repose.—Half-past 12: Dose of morphia repeated, convulsions having recurred with increased violence. Countenance and general surface pale; the extremities cold. As her condition appeared hopeless, and the paroxysms continuing, chloroform was administered on a piece of linen, in half-drachm doses, and its full effect kept up for three hours.—At 2, p.m., there was a slight return of convulsion; skin warm and perspiring; the os uteri was found steadily dilating; and, from her uneasy movements, it was apparent that uterine action had begun.—Half-past 3: The membranes were ruptured, and brisk uterine action ensuing, a dead child was expelled, immediately followed by the placenta. She regained her senses during the expulsive efforts, but appeared entirely ignorant of her previous condition. Recovery followed without any bad symptoms.

In conclusion, Mr. Bolton remarks, that the convulsions were in no measure mitigated by the depletion, which was carried to the utmost, nor was there any yielding of the os uteri until the chloroform was inhaled.

## Art. 130.—*On Chloroform as a Means of preventing Puerperal Mania.* By Professor Simpson.

(*Monthly Journal of Medical Science*, Oct. 1852.)

Recently before the Edinburgh Obstetrical Society, Dr. Simpson gave an account of the use of chloroform in patients predisposed to puerperal mania. He stated the particulars of three cases in which chloroform was used in patients, who in former confinements had been the subjects of puerperal mania. In none of these cases did the disease return. One of them had borne several children previously; and after each labour, had been attacked with puerperal mania, except after the last labour, in which he had employed chloroform.

## Art. 131.—*On the Influence of the Puerperal State in the Duration of Disease.* By M. Gendrin.

(*Rev. Méd.-Chir.*, tom. xi, p. 164; and *Medico-Chir. Rev.*, Oct. 1852.)

In referring to a case of rheumatism in a pregnant woman, M. Gendrin observed that the efficacy of any treatment adopted would not be complete until some weeks after delivery. It is a rule without exception, that the exaggeration of the vital functions characteristic of the puerperal state, impresses a more tedious character upon the diseases which occur during pregnancy or immediately after delivery. In women who have undergone the most favorable delivery, and in whom the puerperal state has been unattended by any serious symptom, there are observable, at first, pallor and a morbid aspect of the skin, erratic sweats, &c.—health, in fact, as yet ill-established. Under the most favorable circumstances, seven weeks are required

before the equilibrium of the functions becomes re-established; and of course a much longer period is necessary if the woman has been ill during pregnancy, or soon after delivery. Whatever treatment we adopt, intercurrent diseases will be prolonged during the duration of this temporary physiological condition. Hence we must not be surprised at their obstinacy, nor seek by violent remedies to obtain a termination that can only be compassed at a certain epoch.

### Art. 132.—*Composition of the Milk in the Female in the State of Health and Disease.* By MM. Vernois and Becquerel.

(*L'Union Medicale*, Jan. 27, 1853.)

M. Payen has presented to the Académie des Sciences, in the names of MM. Vernois and A. Becquerel, an essay upon the composition of the milk of the human female, both in the state of health and of disease, followed by some researches into the composition of the milk of the cow, the ass, the goat, the mare, the sheep, and the bitch.

The authors deal only with the chemical composition of the milk. They observe, that in all published accounts upon the milk of woman, the cow, and the ass, there are remarkable variations in the results; no two accounts correspond. These variations depend upon the mode of analysis.

From numberless observations, MM. Vernois and Becquerel have selected 89 instances to establish the physiological composition of the milk, which is to serve as the point of comparison to all others. They give the composition of the milk, according to the age of the nurse, from 15 to 45 years; according to the age of the milk, from 1 to 15 days, and from 1 month to 24. They pass in review the influences determined by the constitution; by the state of the bosom; by primiparity or multiparity; by menstruation, (its suspension, its return, its special presence;) by alimentation, good or indifferent; by the quantity of milk; by its detention in the mammary glands.

*Healthy Milk.—In* 1000 *Grs.*

| | |
|---|---|
| Water | 889·08 |
| Solid matter | 110·92 |
| Sugar | 43·64 |
| Caseine and extractive matter | 39·24 |
| Butter | 26·66 |
| Salts | 1·38 |
| The density is | 1032·67 |

There is more solid matter in the milk of nurses of the age of from 15 to 20 than in those of from 30 to 40.

The colostral condition augments the quantity of butter. The composition of milk in the *feeble* constitution remains nearly normal. In the *strong*, the weight of the solid parts diminishes. The milk of primiparæ approaches nearest the physiological medium. Gestation, towards its close, augments the quantity of solid matter. The presence of the catamenia diminishes its density, the weight of water, and of sugar, but augments the weight of the solid matter, especially of caseine. The milk of women with dark hair has the advantage over that of women with light hair. Indifferent alimentation per-

mits the introduction of too much water into the milk. The elements chiefly affected are butter and caseine. Excess of butter and of caseine always accompanies a bad state of health in the nurse.

The first and second gestations do not in women give rise to the differences remarked in the cow and the goat. As is observed in the cow, there are certain women, in whom, without well-specified causes, caseine or butter is always in excess. The second part of the essay is devoted to the study of the milk in its morbid state. The conclusions are based upon 46 cases, of which 19 were acute and 27 chronic. MM. Vernois and Becquerel have established, that these two classes of affections exert, in regard to the composition of the milk, a remarkable antagonism. In both the acute and chronic, the water diminishes and the solid parts increase; but there the analogy ceases. In the first, the sugar diminishes considerably; the three other elements increase progressively from the salts and butter to the caseine, which alone repairs all the loss experienced by the absence of sugar. In chronic affections the butter and salts increase; the sugar remains stationary; caseine diminishes. Thus, on the one side, (acute affections,) there is loss of a respiratory element and excess of a nutritive element; on the other, loss of a nutritive element, and augmentation of a respiratory element. The composition of the milk has also been investigated in enteritis, pleurisy, moral troubles, curvature, utero-vaginitis, utero-peritonitis, typhoid fever, scrofulous ophthalmia, bronchitis, phthisis pulmonalis, mammary abscess, syphilis.

In pulmonary tuberculosis, without diarrhœa or emaciation, there are scarcely any sensible modifications. But in the opposite case, the weight of the solid parts is considerably diminished, and it is the butter which bears all the loss. In syphilis, the density increases extraordinarily; the butter diminishes, but the salts augment out of all proportion.

There is no regular and constant proportion in the development of the different constituents of the milk, and it is impossible to speak of its richness or goodness with any just or precise idea from the degree of density, nor from the quantity of butter, nor from the proportion of any other single element regarded by itself; the analysis must, in every case be complete, inasmuch as each element in one sense seems to be independent of the rest.

## Art. 133.—*On Rupture of the Perinæum.* By Mr. J. B. Brown, Obstetric-Surgeon to St. Mary's Hospital.

(*Medical Times and Gazette*, Jan. 15, 1853.)

The plan of treatment adopted in these cases is described in p. 229 of our 15th volume; but we again recur to the subject, in order to put on record the additional evidence which has since been presented to the profession. We would here mention, however, that division of the sphincter on both sides before the application of the sutures is now insisted upon as an essential part of the operation. This indeed is the essential part, for, though Dieffenbach in one or two instances made this division, it was for reasons peculiar to the cases themselves, and not as a rule, his rule being merely to divide the skin by an elliptical incision. This division of the sphincter allows the edges of the wound to remain in contact and at perfect rest, and it allows the operation to be performed successfully immediately after the lesion, a point of no small importance, for without this precaution the action of the muscle would disturb the edges of the wound, the lochia would

flow in between them, and the operation must be deferred until the uterine discharge had terminated.

Mr. Brown affirms four propositions as demonstrable in the subjoined cases: 1st, that the oldest and worst forms of ruptured perinæum could be cured by this operation; 2d, that the worse forms could be cured by operating immediately after the lesion; 3d, that the new perinæum was not torn by or prejudicial to subsequent parturition; and 4th, that those forms of rupture where the sphincter is not torn through should be cured in order to prevent prolapsus uteri, &c.

Case 1.—Mrs. D—, aged 45, admitted into Victoria ward, St. Mary's Hospital, January 30th, 1852. Seventeen years ago confined with her first child; instruments were used, and ever since she had no control over the bowel; has had five more children. Fifteen years ago an operation was performed at Exeter, but unsuccessfully, for at the end of ten days she was worse than before. On one occasion she remained seventeen hours on the night-stool, and was generally unable to leave her house. The whole of the structures between the vagina and perinæum have been torn through, there being no remains of the anterior half sphincter ani; there is very little loose integument about the margins of the rent in the perinæum consequent on the former operation.

*February 4th.*—The day before the operation a purgative was given, and on the day following the operation was performed in the way already described, and the patient left the hospital with a slight superficial fistulous opening from the anus to the vagina, which was treated by caustic, and the patient resumed her duties with comfort. In this case the bowels had been confined by opium eighteen days.

In all essential points the next four cases were similar to the foregoing; in each of them the operation signally succeeded.

Case 6.—Mrs. E., aged —, a private patient, with complete laceration of the perinæum consequent upon her first confinement; the rent was through the superficial muscular fibres of the sphincter, but not through the deep fibres, nor through the rectum. The operation was performed December 29th, and on the 5th of the following January she was convalescent.

Case 7.—Mrs. D—, aged 35, a private patient; February, 1851, delivered of her first child after forty-eight hours of continued labour; perinæum continued like soaked pasteboard, and no care or attention prevented the perinæum giving way entirely through the superficial fibres of the sphincter. Operation immediately performed, but the sphincter not divided: the cure therefore was much protracted.

*Aug. 27th*, 1852.—This patient was delivered of her second child, and, under care, no fresh rupture of the perinæum occurred.

Case 8.—Mrs. V—, aged 29, October, 1851, first child, twenty-four hours in strong labour, the last six producing no good results; os uteri gone, the head on the perinæum; the forceps had been used by the medical man in attendance, and rupture of the perinæum through its whole extent and through the superficial fibres of the sphincter, but not through the deep fibres, was the result. The operation in the manner before described was performed, with the exception of the division of the sphincter, which rendered the union much slower than it would have been; but the patient did very well, and on the 12th November, 1852, Mr. Brown attended the lady, and she had a good labour, and no fresh rupture ensued.

Case 9.—Elizabeth Turnage, aged 37, admitted into Boynton ward, St. Mary's Hospital, March 26th, 1852. Three years ago, at her confinement,

the perinæum was completely ruptured by the sudden descent of the head without medical assistance, at the moment of its extrusion. The rupture did not go through the sphincter or recto-vaginal septum, and she had not suffered from incontinence of fæcal dejections, but much from procidentia uteri, which partially extruded from the vagina and pressed on the rectum, producing fissure of that bowel. The fissure was first cured by division of the sphincter, and the cure of the procidentia uteri attempted by the usual remedies for the restoration of the health, but unsuccessfully on account of the absence of the floor of the vagina. On April 7th the operation for the restoration of the perinæum was performed, as already explained, and on the 24th the patient was discharged cured, with a sound perinæum, and free from procidentia uteri.

Case 10.—Elizabeth A—, aged 23, admitted July 2d, 1852, into Boynton ward, St. Mary's Hospital. Had been married twelve months, confined five months ago, labour lasted three days, no instruments used. The perinæum had been ruptured through its whole extent, but the rent had not passed through the sphincter. There was a procidentia uteri, and discomfort about the rectum, produced by pressure of the uterus on that bowel. On the 7th the operation was performed as previously described, and on the 30th she was discharged cured.

Mr. Brown stated, in conclusion, that he was confirmed in the opinion he before expressed on the benefits to be derived from the use of opium, and the general points in the after treatment.

## Art. 134.—*On the Treatment of Ruptured Perinæum.*
By Professor Roser, of Marburg.

(*Schmidt's Jahrb.*, No. 3, 1853.)

The difficulty of healing in this accident, according to Professor Rosco, depends chiefly upon the way in which the adjacent skin and the mucous membrane tend to meet and unite over each lacerated surface, and so prevent that natural union which ought to take place between the lacerated surfaces themselves,—the tendency to meet and unite being due to the drawings of cicatrisation in the new tissues of the torn parts. He recommends, therefore, that the lacerated parts should be brought in contact without any delay by hare-lip sutures, in order, as far as possible, to anticipate this fusion of the skin and mucous membrane. These sutures he would keep in their places during the suppurative process, if union had not taken place by the first intention, or he would insert them during the suppurative period itself, if not called in to the case before that time. He regards these sutures as indispensable in all cases of deep laceration, and most so in those that are deepest, but not in slight and superficial lacerations; and he allows them to remain from three to four weeks.

## Art. 135.—*Cases of Extra-Uterine Gestation.*
By Dr. F. H. Ramsbotham, and others.

(*Medical Times and Gazette*, Nov. 13, 1852, and Feb. 19, 1853; *American Journal of Medical Science*, Jan. 1853; and *Dublin Quarterly Journal of Med.*, Feb. 1853.)

Dr. Ramsbotham recommends the extraction of the fœtus by incisions

in all undoubted cases of extra-uterine gestation before the commencement of that ulcerative process which, in most instances, sets up for the evacuation of the offending mass; and as enforcing this recommendation he recapitulates the particulars of a case occurring in 1834, and more than once published, in which the fœtus was extracted in this way after the patient had been first tapped for what appeared to be ovarian dropsy. In this case, however, ulcerative mischief had commenced, and some of the intestinal contents passed through the wound during the process of cure, but the ultimate result was successful. Many cases are on record where the fœtus has been extracted, after the occurrence of suppuration, by enlarging the opening caused by the bursting of an abscess externally, but this is the only case on record where the fœtus was removed without any evident attempt on the part of nature to rid herself of her unnatural burden.

Dr. Ramsbotham has met with thirteen cases of extra-uterine conception; "in four death occurred from the rupture of the cyst; in three death occurred during the process of evacuation of the putrid mass per anum; one woman died at the very commencement of the process; four women recovered (two surviving the debility consequent upon putrefaction of the fœtus, ulceration, and evacuation per anum; one carrying the fœtus more than twenty years; and one in whom the child was removed by incision); and one, an unmarried woman," the sequel of whose history is not known.

1. *Dr. Ramsbotham's Case.*—On February 24th, 1851, writes Dr. R., I was requested by Mr. Kennedy, of Stratford, to visit a woman who had borne two or three children, living at Forest-gate, in consequence of her abdomen containing a solid substance of a somewhat doubtful character. I learned that Mr. Kennedy had seen her at the end of May, 1850, for the first time, and that she was then suffering from menorrhagia rather profusely. This continued, more or less, till the 4th of August, some time before which date she felt decided movements like those of a fœtus, and he pronounced her pregnant. She progressed tolerably well, in what was supposed to be healthy gestation, the movements of the child being very perceptible, gradually increasing in strength, and producing but little inconvenience, till the beginning of January, when she was attacked with violent spasmodic pains in the abdomen, which she likened to those of labour. These lasted about twenty-four hours, and then entirely disappeared. At the same time the movements of the fœtal limbs ceased, the child having been more than usually restless during the continuance of these pains. Her general health remained good, and she had no return of her sufferings; but the period allotted to gestation having passed, Mr. Kennedy thought it right to institute a vaginal examination, and, suspecting the case to be one of extra-uterine gestation, he requested me to see her with him. This I did on February 24th. I found her walking about the house, her abdomen being as large as that of a woman at the termination of ordinary pregnancy. I could detect in it a solid substance, very moveable, giving to the hand all the characters of a double fœtal body, the limbs being clearly to be traced, floating, as it appeared, in a considerable quantity of fluid. An examination per vaginam discovered the uterus rather larger than its natural unimpregnated size, but empty; it was thrown forwards, and the os uteri was canted considerably upwards behind the pubes, by a solid substance between it and the rectum.

I had no doubt, as well from the history of the case as from my personal

examination, that it was one of extra-uterine pregnancy, and that the child had been carried to its full time, or nearly so, before it died. I recommended, as she was scarcely suffering any inconvenience beyond what arose from her bulk, that the treatment should be purely palliative; that she should be watched closely; and that, on the first indication of her health giving way, the fœtus should be removed from the abdomen by incision.

In March, Mr. Adams, Surgeon to the London Hospital, was called in consultation. He came to the same conclusion with regard to the nature of the case that myself and Mr. Kennedy had arrived at; and agreed with us also in the propriety of a passive treatment being pursued, at least for the present.

Soon after this, she began to increase in size, and I saw her again on May 25th in consequence. She was then certainly larger than she was when I visited her last; but still her general health was good, and she did not appear much distressed by her bulk. The increase was owing to there being a greater accumulation of fluid; the solid body contained within the abdomen remaining just of the same size, and in the same situation as before. But the enlargement progressed; and on June 9th, when another consultation was held with Mr. Adams, it was thought advisable to draw off the fluid, although, as her health still continued good, we were all averse from the performance of any more serious operation just then. She was therefore tapped: and about sixteen ounces of dark matter were evacuated. She was considerably relieved by the operation, and continued to perform her domestic duties for more than seven months, the aperture having healed, and no fresh effusion of fluid having taken place.

In January her health began to break slightly. Neither Mr. Adams nor I was apprised of this fact; but Mr. Kennedy strongly urged an operation for the removal of the fœtus, both upon herself and her husband. They each steadily objected to it; she suddenly got worse, and sank on the 25th of April, worn out by diarrhœa and low fever.

The examination of the body after death discovered a full-grown well-developed fœtus, quite putrid, lying across the cavity of the abdomen, with the head towards the right side, completely shut out from the peritoneum by a cyst of false membrane, which had itself become putrid in every part. Nothing like a placenta could be found, nor any cord, nor amnion, nor chorion. They seemed, as I learned, (for I was not able to be present at the inspection,) to be undiscoverable in the confusion of the structures consequent on the putrefaction of the investing membrane.

The other cases that we have to record in our present Number are by Dr. Porter, of New London, Connecticut; by Dr. Langley, Surgeon to the 63d Regiment; and by Dr. Skirvan—the last case being one in which the fœtation occurred in a hernial sac.

2. *Dr. Porter's Case.—July* 15, 1852.—A married lady, aged twenty-eight years, mother of three children, the youngest two years of age, and who, until within a few days, had been in perfect health, was this morning attacked, while stooping, with excruciating pain in the left pelvic region, extending upward as high as the kidney. Within half an hour the pain in a great measure subsided; and, under the influence of two grains of opium, entirely ceased. On the day following she was about the house; the seat of pain, however, remained tender.

21*st.*—Another attack of pain was experienced, more violent and continued than the first, extending upward towards the kidneys, and through the back, resembling, in some of its features, nephritic colic. This suspicion was strengthened by the fact that for some days past the urine has been high-

coloured, and depositing a lateritious sediment. No pain or numbness, however, extends down the corresponding thigh. Pulse nearly natural as to frequency, but weak and soft; the patient, mean time, rolling about the bed, dripping with cold perspiration. Powerful anodynes and sinapisms were resorted to, as were alkalies, directed to correcting the lithic diathesis.

25*th*.—Patient had been so comfortable as to sit up most of the day; and, though some pain and tenderness existed, was dismissed from further attendance. To-day, however, she was similarly attacked for the third time. Pain excessive, and prostration so great that stimulants in large quantities became necessary to prolong life. Distress chiefly in the left side, extending, however, over most of the abdomen. There was also retention of urine; and now, as for two days previously, a slight sanguineous discharge from the vagina. About twelve hours from the attack a powerful reaction occurred. More or less tympanitis existed from the first, but calomel, castor-oil, and turpentine operated kindly, with large gaseous discharges. The faintness gradually became more profound, and reaction less efficient. In full possession of her mental faculties, death from anæmia occurred about thirty hours from the commencement of this last attack.

*Autopsy*.—Abdomen prominent, and slightly tympanitic. On making the first incision, bloody water gushed out, and, on continuing the dissection, the left side of the pelvis was found full of clots and blood, probably in all forty ounces. The left ovary was enlarged to the size of a very small hen's egg, of a "black reddish" hue, and adhering to its right side were clots of blood. On removing these, and making a slight incision, a small quantity of water escaped, followed by a fœtus of perhaps the sixth or seventh week, its size being about that of a honey-bee. The Fallopian tube was found floating freely in the cavity of the abdomen, and was pervious to the probe, showing that the sanguineous vaginal discharge, which occurred during her illness, probably passed through it to the uterus.

3. *Dr. Langley's Case*.—Mrs. Jane Eliza O'Brian, aged 22 years, married five months, without leave, residing in the town of Athlone, was seized with severe pains, similar to labour pains, early on the morning of the 21st December, 1852. I was requested to see her at 1 o'clock, p.m. on that day, by her husband, gunner and driver John O'Brian, Royal Artillery. She lay in a semiflexed position in bed, with her thighs somewhat bent upon the abdomen, and the legs on the thighs. She looked very pale, anxious, and depressed, and at first indisposed to answer my questions. Pulse tolerably full and firm, about 70. Stated that she was five months gone with child, and had strained herself on the previous day whilst spreading clothes to dry on a line; that she suffered from most distressing pain in the small of her back, extending to the abdomen and thighs, the pain as referred to the abdomen being especially distressing. No flooding or discharge of any kind was apparent, nor could the os uteri be felt in the least dilated. She was very desponding, and said she was sure she would die. Ordered an anodyne and slightly stimulating draught, which composed her for some hours; she was again seen by Assistant Surgeon Rutherford, 62d regiment, at 9 o'clock, when the same train of symptoms were observed as in the morning, and the same remedies had recourse to; but at 10 o'clock she got up to take a drink, became suddenly faint, fell back in the bed, and died almost instantaneously.

*Sectio Cadaveris, Forty-eight Hours after Death*.—On laying the abdomen open an immense quantity of fluid blood was found, filling up the whole of pelvic and hypogastric regions, and a fœtus at about the fifth month was seen floating in the umbilical region through the transparent membranes, which were whole and perfect, but broke as soon as they were taken in the hand.

The umbilical cord was traced to a large rent in a hollow membranous sac, in the right ovarian region, somewhat similar in shape to the womb, to the inside of which the placenta was seen to be adherent, but on further examination the unimpregnated womb was also discovered and laid open for the purpose of tracing its connection with the other body, which had evidently been the resting place of the fœtus, and an imperfect deciduous membrane, an abortive effort of Nature made for the reception of the future being, was found lining the inside of the womb, but the Fallopian tube was impervious, and prevented its transmission to its natural abode. The dilated bag of the ovary was connected with the true uterus by means of the right Fallopian tube, the fimbriated extremity of which covered and was adherent to it. This woman had suffered from pain, and a variety of anomalous sensations in the right groin and lower part of abdomen for several months, at least three or four, but would not submit to an examination.

4. *Dr. Skirvan's Case.*—An otherwise healthy woman, aged 38, had from childhood an imperfectly-developed inguinal hernia on the left side. She had been delivered eight times without the occurrence of anything abnormal, except that on one occasion she had given birth to twins; however, in consequence of her labours being difficult, the hernia had gradually increased, until it had attained to half the size of a child's head. The patient suffered no other inconvenience from it than that occasioned by its bulk, and the hernia was easily reduced during her confinement to bed. In October, 1850, she experienced, while in the act of stooping, the sensation of a round body falling suddenly into the hernial sac; from that time the hernia steadily increased in volume, and the tumour became the seat of pains similar to those caused by a burn, which were relieved by cold applications. Two months later the patient perceived slight movements in the tumour, and Dr. Skirvan then saw her for the first time; he diagnosed an extra-uterine pregnancy, but deferred operating. On the 24th of April pains set in; they extended from the sacrum to the hernia, and rapidly increased both in frequency and intensity. The patient having been put under the influence of ether, an incision five inches long was made in the fundus of the tumour, which now reached to the knee; the placenta was then observed covered with a sero-fibrous envelope three lines in thickness, the structure of which roughly resembled that of the uterus. The child was extracted living, with the membranes, but died in an hour after the operation. The wound soon closed, and the patient recovered completely; the hernia, however, continued as large as it had been before its occupation by the fœtus. This case is taken from the 'Weiner Zeitschrift.'

## Art. 136.—*On Discharge of Fluid from the Nipple in Innocent Tumours of the Breast.* By M. Richard.

(*Rév. Medico-Chirurgicale*, tom. xi.)

M. Richard observes that while in cancerous tumours, which in their growth induce atrophy of the mammary gland, no discharge from the nipple takes place, that innocent tumours, as partial hypertrophy of the gland, or cystic growths, are always attended with more or less discharge or oozing, the fluid being sometimes syrupy or adhesive, and at others bloody. Repeated opportunities of observation have convinced him that this is a valuable diagnostic and prognostic sign.

ART. 137.—*Upon the Results of Examination with the Speculum in 112 Women suffering from Gonorrhœa.* By Dr. EGAN.

(London, Churchill, 8vo, pp. 346.)

The subjoined passages, which are referred to in a former page, form our second illustration of the contents of this interesting work.

I have drawn up, in a statistical form, writes Mr. Egan, the details of one hundred and twelve cases of gonorrhœa,* and the appearances presented upon examination with the speculum; which, as they differ in some important particulars from those furnished by the majority of writers already cited, will not, I trust, be looked upon as altogether devoid of interest. In the course of these inspections, I ascertained that gonorrhœa in the female is not confined to the vagina, as was formerly supposed, but frequently extends to the uterus; generally involving the neck of that organ, and occasionally penetrating the cavity of the uterus itself; and thus, by a vitiated secretion of muco-purulent matter from the cervix uteri, or from the internal lining membrane of the uterus, the disease may be kept up for an indefinite period, whilst the vagina may be perfectly healthy. Such was the case in fourteen instances detailed, in which no disease of the vulva or nymphæ was apparent, while a copious discharge was the result of a diseased state of the lining membrane of the uterus.† In ninety-eight cases, the vagina presented a more or less inflamed appearance. In thirty-eight, granular erosions were apparent on the cervix uteri, with attendant induration in six. In fifty-seven, the os and cervix exhibited an erythematous condition, generally accompanied with engorgement and slight induration. In six, there was hypertrophy of the anterior lip of the os uteri. In six, there was enlargement of the posterior lip. In thirteen, both lips were equally engaged. In ninety-seven, the cavity of the neck of the uterus participated in the disease. The duration of the affection previous to examination was as follows:

| CASES. | WEEKS. | CASES. | MONTHS. | CASES. | YEARS. |
|---|---|---|---|---|---|
| 1 | 1 | 11 | 1 | 11 | 1 |
| 11 | 2 | 18 | 2 | 8 | 2 |
| 8 | 3 | 7 | 3 | 1 | 3 |
| 3 | 5 | 4 | 4 | 1 | 4 |
| 1 | 6 | 4 | 5 | 1 | 7 |
| 1 | 10 | 8 | 6 | 1 | 8 |
| 1 | 11 | 2 | 8 | | |
| | | 3 | 9 | | |
| | | 4 | 18 | | |

In glancing at the results of those statistical returns, it will be observed that *glandular erosions of the neck of the uterus* were only discernable in about one third of the patients submitted to examination; a statement at variance with the experience of continental writers, more especially with those of M. Ricord, who affirms that this peculiar lesion of the cervix uteri is to be

* These tables were exhibited at the Surgical Society of Ireland.

† In the recent edition of his work on inflammation of the uterus, Dr. Bennet seems to doubt that the lining membrane of the uterus is ever involved in this affection. I have, however, satisfied myself, on post-mortem examination, that such a condition does exist.

found in nineteen out of twenty cases of gonorrhœa, thus enabling him to decide between the infectious and the more common forms of vaginal discharges to which females are liable. I think, however, from the absence of this symptom of disease in women, where, from the previous history of the case, no doubt can exist as to the venereal origin of the affection; and, on the other hand, from its occasional presence in females labouring under leucorrhœa,* whose rank in life and virtuous habits place them beyond all suspicion of infection, we would by no means be justified, in this country at least, in pronouncing, either in a medico-legal point of view or otherwise, a positive opinion as to the nature of the disease from any evidence derived from this source. This I contend is a point of paramount importance: either the disease assumes a different character, and produces different local effects on the continent; or M. Ricord must have fallen into an error that, to the medical jurist, might have been productive of grave results, and have blighted for ever his professional reputation.

How such a statement could have remained unrefuted till now, I cannot for a moment conceive, except on the supposition of want of sufficient opportunity to decide the question! What then, it will be asked, are the diagnostic symptoms of gonorrhœa, or how are they to be distinguished from leucorrhœal discharges? To this I must candidly reply, that apart from the history of the case I have as yet discovered none. True, microscopic and chemical analysis have both been brought to bear upon the subject; but although the former has taught us that the uterine secretion presents, under the microscope, a different appearance from that of the vaginal; and the latter has demonstrated that their reactions are dissimilar, the uterine partaking of an alkaline, while the vaginal discharge continues acid; no practical value, in a diagnostic point of view, can be attached to those researches. Nor will urethral irritation enable us to clear up the difficulty; every day's experience affording us examples of the presence of this symptom in leucorrhœal, and its absence in many of the forms of gonorrhœal affection. Again, I find my experience conflicts with that of Dr. Bennet and others, who state that they have discovered ulcerations of the cervix and even of the internal surface of the uterus, as a frequent attendant in syphilitic females; the common occurrence of which they ascribe to the abandoned life this class of patients usually lead. That this condition obtains in the more virtuous description of patients I cannot for a moment doubt, but that *prostitutes* enjoy a peculiar exemption from this formidable lesion I am perfectly satisfied. I have looked for it over and over again, both in individuals subject to discharges, and likewise in those affected with the secondary and tertiary forms of syphilis; *and with the exception of two instances, I most decidedly have never encountered ulcerations, properly so called, either of the exterior or interior of the uterus.* Indeed, I am at a loss to reconcile the mildness of the symptoms, in the more chronic forms of the complaint, with even the *possibility* of ulceration; as we find that, after the subsidence of inflammatory action, not the slightest uneasiness is in the majority of cases complained of.

## (B.) CONCERNING THE DISEASES OF WOMEN.

### ART. 138.—*A New Mode of Treatment for Prolapsus Uteri.* By M. DESGRANGES.

(*Lancet*, Oct. 1852.)

M. Desgranges, surgeon to the Lyons Hospital, has laid before the

* See a paper on Affections of the Uterus, by Dr. Evory Kennedy, in the Dublin Quarterly Journal for February, 1847.

Academy of Medicine of Paris a new mode of remedying the uterine displacement. It consists in pinching up the mucous membrane of the vagina, after reduction, with little forceps, or "serres fines" of Vidal. The forceps produce ulceration, and fall off from the fifth to the tenth day; and M. Desgranges repeats this operation eight or ten times, taking care always to leave as many of the forceps as possible. At the commencement, he introduces as many as nine; later, from six to four; and at last, towards the end, only one of the little instruments. The treatment lasts in general two months and a half, or three months.

It will be seen that this method rests on the fact that the narrowing of the passage may prevent any further descent of the organ, the loss of substance and cicatrization being instrumental in the result.

### Art. 139.—*Prolapsus Uteri cured by Retroflexio Uteri.* By M. Seyfert.

(*Prag. Vjhrschr.*, x, 1853; and *Schm. Jahrb.*, No. 4, 1853.)

The author relates three cases of women suffering from long-standing prolapsus uteri, who were unexpectedly and permanently cured of their complaint by retroversio uteri happening during the application of the cold water douche, and who suffered far less from the new complaint than from the old; and guided by this experience, he has endeavoured to induce retroversio uteri artificially, in persons suffering from bad prolapsus uteri, either by long-continued rest on the back, or by the use of the uterine sound. The results which have attended this practice are not stated.

### Art. 140.—*Cases of Polypus Uteri.* By Dr. Francis H. Ramsbotham, and Dr. Oldham.

(*Medical Times and Gazette*, Nov. 27, Dec. 4, 25, Jan. 1 and 29.)

These cases are taken from a long series of cases illustrative of various points in the history and treatment of polypus uteri. The one shows that the polypus may occasionally recede within the uterus so as to render the question of its existence doubtful; the other, that a great diminution in size may happen after parturition in cases where the polypus has coexisted with pregnancy.

*Case* 3.—Miss F—, of B——, in Essex, about thirty-two years old, consulted me in the autumn of 1839, for irregular hæmorrhagic discharges, attended with frequent attacks of vomiting, which had made considerable inroads upon her strength. Nothing could be detected by examination per vaginam, beyond a slightly increased size and weight of the uterus. As she lived in the house of her brother, a highly respectable and intelligent practitioner of medicine, she was necessarily carefully superintended. Nevertheless she occasionally made a journey to London for my advice; and it was not till the middle of the year 1841 that I detected the apex of a polypus protruding through the os uteri. At the end of July it was sufficiently external to warrant an attempt at removal; and she took lodgings in my neighbourhood for that purpose. She was then so much depressed by hæmorrhage, leucorrhœa, and sickness, that she was confined almost entirely to the

sofa and bed. On the day when it was agreed that she should remain in London, I could surround the tumour distinctly, and ascertained that it was attached towards the anterior part of the body of the womb. Waiting for her to recover somewhat from the fatigue of her journey, I made an appointment to tie it on August 2d; but found that it had entirely retreated within the uterus, and the mouth of that organ had closed upon it. On the 5th it was again to be felt; and I went on the next day, hoping it would have descended low enough for the operation to be performed; but it had again quite disappeared. However, on the 10th, it protruded lower than it had ever done before. It was not larger than a hazel-nut. I could now not only feel the stem, but could discover the point of its attachment. I had some difficulty in passing the ligature around it, as well in consequence of its small size and mobility, as from the constriction of the vagina and narrowness of the os externum. It was, however, satisfactorily noosed, and came away on the fourth day. On all these occasions Mr. Hamilton, surgeon to the London Hospital, accompanied me. The hæmorrhage, which had been going on almost incessantly for some length of time, ceased entirely as soon as the ligature was tightened; there was very little return of sickness after the tumour separated. On the 19th, a coloured discharge came on, which lasted five days, and which I have no doubt was a catamenial period, and she went home before the end of the month, free from any kind of discharge, and stronger than she had been for years before.

*Case* 16.—The following case in which pregnancy twice occurred under the presence of a polypus uteri, I shall give as briefly as I can, since it is already recorded more at length by my father and myself elsewhere. On Sunday, Aug. 1, 1821, my father's opinion was sought by the wife of a tradesman at Shadwell, who had been safely delivered on the Friday previous, but from whose vagina a fleshy mass, the size of a large pear, had protruded about noon on Saturday. Under the idea that it was a "false conception," some rather forcible attempts had been made to take it away before my father's arrival. The patient had been put to a good deal of pain by these attempts, and she was somewhat exhausted; he contented himself, therefore, with returning the tumour within the vagina; and on his subsequent visits, as he found her progressing favorably, suckling her child satisfactorily, as there was no uterine hæmorrhage, and as she greatly objected to any vaginal examination being made,—fearful, I suppose, that some operation would be attempted,—he felt satisfied for the time about her safety, and did not further interfere. She became pregnant again, and wished to have his assistance at her confinement. She went into labour on January 9th, 1824; and, as he was not at home when he was summoned, I went in his stead. I found the lower part of the pelvis completely filled by a solid tumour, that I had no difficulty in recognising as a polypus; the uterus was acting with much straining; the membranes of the ovum soon broke, and the head of the child forced the polypus external to the vulva before it, its connection with the uterus still continuing unbroken. The body of the child, as well as the placenta, almost immediately followed; and my father entering the room at the time, it became a question with us whether we should tie a ligature round the stem of the tumour, and cut it off below, since it was lying quite external, and therefore within easy reach,—or whether we should return it, and leave it to be removed after the woman had recovered from the immediate effects of her labour. We thought that, as the uterus diminished in volume, the tumour, as being nourished by the uterine vessels, would also shrink in size, and therefore that its removal would be less formidable at a little distance of time; and besides this, we feared that the double irritation of the attached ligature and inflicted wound might excite in-

flammation in an organ so prone to take on itself that unhealthy state as is the uterus after delivery. The result justified our expectations. The tumour diminished so greatly in size, that, although it was very nearly as large as an ordinary fœtal head, as we saw it protruded forth between the thighs, in four months, when it was tied, there being no symptoms in the interim to require earlier removal, it was not larger than a walnut divested of its outer husk.

Another case of the same nature as the last, is recorded by Dr. Oldham in vol. viii, part i, of the 'Guy's Hospital Reports.' Dr. Oldham writes as follows :—

The following instructive case occurred in the practice of Mr. Vidal, of Aveley, in Essex, with whom I saw it in consultation, and at whose request it is now published.

A middle-aged lady, whom Mr. Vidal had attended in six confinements, one of which was preternatural, was advanced to her full time in her seventh pregnancy in October, 1851. On the 4th of October she complained of much pain, simulating labour-pain, for which Mr. Vidal, finding it to be of a spasmodic character, prescribed some saline medicine with small doses of opium, which relieved it; and labour itself did not come on until the 17th of October. On examining after the membranes had ruptured, Mr. Vidal detected a transverse presentation, with the hand and arm in the vagina. He at once proceeded to turn the child, which was accomplished with considerable difficulty in two hours, the placenta soon following. The child was dead. He left her doing well; and his attention was drawn, on his first visit, to a large swelling bulging out beyond the vulva, which had gradually descended without any pain beyond what might be called after-pain, and no hæmorrhage beyond the usual lochial hæmorrhage. From the size, shape, and physical characters of this swelling, and its forming so soon after labour, Mr. Vidal concluded that it was an inverted uterus, and at once endeavoured to reduce it. He passed it within the vagina, but it soon protruded again, and other occasional endeavours to reduce it were attended with a like result. She was diligently kept in a horizontal posture; the bowels were relieved of a quantity of collected fæces; some saline medicines, and subsequently some tonic medicine, were administered with benefit, and she was allowed a sustaining diet. On the 27th of October I obeyed a summons from Mr. Vidal, and saw this patient with him. I found her rather pale, and anxious, but quite free from that kind of distress which betokened any serious lesion. Her mind was tranquil, and ready in informing; her pulse quiet; skin cool; and tongue clean and moist. The only circumstance in her pregnancy which she had particularly noticed, but without complaining of it, was that the abdomen was "fuller and harder" than usual. Since her confinement she had not suffered much pain, and there had been an entire freedom from active hæmorrhage. Placing her on the back and examining the abdomen, the uterus felt hard, large, with an inclination to the right side, reaching rather higher than the umbilicus, with an even convex outline, and free from tenderness; its size, solidity, and prominence were conspicuous, and around it the intestines were distinguished by percussion. Examining by the vagina, this canal was found to be largely distended by a smooth, globular, insensible tumour, which reached as low as the vulva, but without protruding beyond it. The fingers were passed at their fullest stretch both in front and behind this tumour without reaching the os uteri, and the tumour was found to pass in undiminished size into the interior of the uterus, where of course it could not be followed. At the posterior part, the surface of the tumour had contracted some feeble adhesions to the vagina, which readily give way under the pressure

of the finger, a trifling oozing of blood following the separation. On drawing aside the labia, the lower part of the tumour was readily seen and felt; it was highly vascular, covered by a smooth unbroken membrane, and to the touch it had not a very dense consistence. A quantity of thickish mucus, tinged with blood, but free from offensive smell, came away from the vagina.

My opinion respecting this case was, that a polypus had been developed in the interior of the uterus concurrently with gestation, that it had largely and directly participated in the developmental growth of the uterus, and that it had been partially expelled from the uterus after the separation of the placenta. As there was no urgent symptom, more particularly as there was no *hæmorrhage*, I recommended that we should wait a month or five weeks to see how much it lessened with the reduction of the uterine structures; and during that time she should follow Mr. Vidal's plans, retaining the horizontal posture, taking good nourishment and mild tonics, with the occasional exhibition of aperient medicine, and habitual local washing.

*Nov. 24th*, 1851.—I again visited this lady, and found her much improved in health and strength; since last I saw her she had gone on without a bad symptom; the abdomen had gradually reduced, she had been free from hæmorrhage, and had but little discharge. The body of the uterus could still be felt above the pubes, and internally the polypus was found remarkably diminished. It was now in shape, size, and consistence like a tongue, with a broad uterine attachment. The os uteri was deeply fissured, soft, and open. The shrunken polypus was as before, insensible to the touch, and the general softness of its texture showed that it was not a fibrous tumour pediculated. Mr. Vidal and I were both struck with the rapid absorption which had taken place, and although I had come prepared to apply a ligature to the polypus, we both concurred that it was better to leave it alone yet longer, and see the extent of its spontaneous retrocession.

I have not seen this patient since, but Mr. Vidal writes to me, (Feb. 20th, 1852,) "On my last examination I found the tumour quite gone, and the discharge subsided; menstruation regular. She appears now in good health and spirits; good appetite; bowels free without medicine; and she walks and rides in the carriage without fatigue."

## Art. 141.—*On a New Mode of Operating for Ovarian Dropsy.* By Mr. J. B. Brown.

(*Lancet*, June 5, 1852.)

This mode consists in excising a portion of the cyst, returning the remaining portion into the peritoneal cavity, and closing the wound by sutures, and so allowing any fresh fluid secreted by the remains of the cyst to escape into the cavity of the abdomen, thence to be taken up by absorption and removed by the kidneys. The operation is not considered applicable to every case, nor are rules laid down for the selection of cases. Three cases are related in illustration, all of which continue well up to this day.

Case 1.—This case had been alluded to on a former occasion, and Mr. Brown now read the notes of the case as they were taken by Mr. Bullock, at St. Mary's Hospital, where the operation was performed. The woman, aged 47, was subject to prolapsus uteri, which Mr. Brown considered as presenting a sufficient objection to treating the case by pressure. The swelling first appeared rather on the left side, about nineteen years ago, but had increased

rapidly during the last six months. The following was her condition on admission to St. Mary's Hospital, February 13th, 1852:—Abdomen considerably enlarged, with shooting pains extending to the shoulders. Complete procidentia uteri, returned with difficulty. Percussion dull in front, resonant at the sides, less so on the left than the right; fluctuation very distinct, the integuments moving freely over the tumour.

*February 14th.*—Ordinary diet: porter, one pint; blue-pill, three grains; compound aloetic pill, four grains every night, with saline diuretics.

*March 6th.*—General health good; some fluid drawn from the cyst with a small trocar was quite clear, with only a trace of albumen and some chlorides.

*10th.*—She was placed under the influence of chloroform, and an incision was made through the integuments down to the linea alba, from an inch and a half below the umbilicus, extending four inches. The linea alba was then divided, afterwards the transversalis fascia, and finally the peritoneum; the cyst was then presented to view, and found to be free from adhesions. It was seized by a pair of forceps, a large trocar was introduced, drawing off about sixteen pints of fluid, leaving some fluid in the cyst, and then a piece of the cyst, which appeared comparatively free from blood-vessels, was excised. The external wound was closed by interrupted sutures, the ligatures including all the abdominal parietes except the peritoneum. She was ordered two grains of opium immediately, and one grain every three hours. A pad of wet lint was placed over the wound, and a broad bandage round the abdomen. Severe peritonitis ensued for the first five or six days, which was subdued completely by large and repeated bleedings from the arm, with calomel and opium. In eight days the abdominal tenderness had subsided, the abdomen became flaccid, and the urine passed exceeded in quantity the fluid swallowed. By the 21st (eleven days after the operation), the remains of the cyst could be felt on the right side of the cicatrix, as a solid substance of an irregular form. On the 3d of April no increase of the abdomen could be discovered, and on the 6th she was discharged. Mr. Brown said he expected that the kidneys would continue to secrete more fluid than was drunk for some time, and that the cyst would ultimately become of an indurated, perhaps calcareous, character, possessing less vitality, and incapable of secreting fluid.

Case 2.—In this case, which had been treated nine years ago by tapping, pressure, mercurials, and diuretics, so far successfully that no return of fluid took place for seven years, the abdomen had been gradually enlarging for the last two years, and the patient was anxious for a radical cure, and sanguine as to the result of the operation of excision of a portion of the cyst. She was previously prepared for the operation by a farinaceous and milk diet, avoiding stimulants, and keeping the bowels well open daily, under which treatment the size of the abdomen was materially reduced. The operation was performed on the 29th of March, 1852, in a manner similar to that related in Case 1. Nine pints of clear fluid were withdrawn, and a portion of the cyst excised. But it unfortunately happened that the peritoneal coat of the cyst was very vascular, and hæmorrhage ensued, which was not to be subdued by torsion of the vessels. As there were no adhesions, it was determined to remove the whole cyst. A double ligature having been tightly applied over the pedicle, which was attached to the left ovary, about an inch and a half broad, and containing one large blood-vessel, the pedicle was divided, the cyst removed, sutures applied, and over them a many-tailed bandage. The case did very well, no signs of inflammation occurred, the ligature came away in four weeks, and on the day following the patient was in her drawing-room, convalescent. This case was related, as illustrating an important difficulty which might

occur, rendering the removal of the whole cyst a safer practice than tying several bleeding vessels, and leaving the ligatures within the peritoneum, a source of much danger.

Case 3.—In this case the operation was performed in a similar manner to that detailed in Case I. A portion of the cyst was excised, but a second large cyst was found, the fluid of which was evacuated, and the wound closed. An attack of inflammation ensued, which was successfully combated by bleeding, calomel, and opium, and the patient did well. The first cyst became collapsed, and could be easily felt beneath the walls of the abdomen; but the second cyst has frequently filled since; and now, sixteen months after the operation, it fills at a much slower rate, and the patient's health is much improved. Steady and firm pressure has been had recourse to after each tapping, to which Mr. Brown attributes mainly the slower filling of the cyst. This case was related to show another complication which might occur.

## Art. 142.—*On the Position of the Patient in Tapping Ovarian Cysts.* By T. H. Tanner, M.D., L.R.C.P.

(*Lancet*, Nov. 20, 1852.)

In performing the operation of paracentesis abdominis for the purpose of evacuating the contents of an ovarian cyst, or of giving exit to ascitic fluid, it has hitherto been almost constantly the practice to place the patient in a half-sitting posture upon a couch or chair, and a broad bandage with a slit over the part to be punctured, having been passed around the abdomen, to make a small incision through the skin with a bistoury or abscess lancet in the linea alba, about midway between the umbilicus and pubes, and through the incision to plunge a trocar and canula. Less frequently in cases of ovarian dropsy, the part chosen for the puncture is through the linea semilunaris, a practice, however, which should only be adopted when it is known with certainty which ovary is affected, the semilunar line of the same side being chosen; the risk of wounding the epigastric artery or one of its branches by the proceeding, as has been done with a fatal result, must not be forgotten. The same remarks apply against the selection of that point where a line drawn from the lower edge of the last false rib to the crest of the ilium is intersected by another line drawn from the navel to the back. For reasons which will be presently seen, it has lately been proposed, by Dr. Simpson of Edinburgh, to modify the usual proceeding by placing the patient in the recumbent posture upon the edge of a bed; and an opportunity having offered itself to me for testing the efficacy of this plan, I did so a few days since. The principal features of the case are briefly these:—

M. S—, aged forty-six, married twenty-four years, never been pregnant, applied to me, as an out-patient at the Hospital for women, on the 13th October, 1852. Has always enjoyed good health, though she has never been very strong. Catamenia first appeared at seventeen, without pain; they continued regular until her marriage, since which time they have been slightly irregular, and attended with suffering; has always had leucorrhœa. Until eight months ago she was in her usual health, and, as she says, free from any complaint. At this time, however, while lifting a heavy weight she felt something give way at the lower part of her abdomen, and for half an hour afterwards ex-

perienced great agony, which then slowly ceased, and was almost forgotten until one month afterwards, when she began to complain of a constant aching pain in the same situation, especially over the left ovarian region. She then noticed that her stomach was enlarging, the enlargement appearing equal over every part, not more on one side than the other, and shortly afterwards she became an out-patient at one of our metropolitan hospitals. During her attendance at this institution, she took the iodide of potassium in rather large doses, and rubbed some iodine ointment frequently over the abdomen. This course of treatment, without in any way diminishing the size of the tumour, materially injured her general health, and she rapidly became very weak and emaciated. On discontinuing her visits to the hospital, her health improved; but as she suffered much pain and inconvenience from the distension of the abdomen, she at the end of three months put herself under my care. At this time she still appeared in bad health, was weak, and could only walk with difficulty; she suffered from dyspnœa, which occasionally became urgent. On examining the abdomen, it was found enlarged to about the size of a woman's at the full term of pregnancy; the enlargement was uniform, and fluctuation could be distinguished over every part; there was also universal dulness on percussion. She measured thirty-two inches and a half in circumference at the umbilicus, and nine inches from the umbilicus to the pubes. She complained of great pain and tenderness at the upper part of the abdomen, especially over the region of the liver; the pain was increased by pressure, and by any movement requiring much exertion. On making a vaginal examination the uterus was found to be healthy. There was no difficulty in diagnosing the existence of cystic disease of one of the ovaries, and it was considered clear that there was either only one cyst, or a large cyst with smaller ones at its base, near the pedicle. With the view of improving her health, and relieving her sufferings, she was ordered some ammonia in a bitter infusion, with small doses of opium, and directed to live well and carefully. Under this treatment she gained a little strength, but still complained so much of the distension of abdomen, and had occasionally, such alarming attacks of dyspnœa, that I determined to give her relief by tapping, to which operation she was most anxious to submit. On the 25th October, therefore, assisted by Mr. Sanderson and Mr. James Rice, this proceeding was carried out, the patient being placed on a bed in the recumbent position on her right side, and, as the contents of the cyst flowed out, being turned over gradually on to her face, so as completely to empty the sac. On then examining the abdomen it was found that the tumour was a multilocular one, but that by far the largest cyst had been emptied. A bandage was applied round the abdomen, and the woman expressed herself as feeling comfortable; she had previously complained of being cold, but had not been at all faint. The fluid removed was rather more than nine pints in quantity, dark-coloured, resembling linseed-tea, and was in part gelatinous, so that the canula occasionally became obstructed; it was of neutral reaction, and a specific gravity of 1030, and contained a large quantity of albumen, becoming almost solid on the application of heat or nitric acid.

The advantages which appeared to result from the position of the patient are these:—First, that it is a comfortable one, free from restraint, and one from which the patient has not afterwards to be moved; secondly, that the belly-bandage, and the two assistants necessary to tighten it, in order to promote the flow of the fluid when the sitting posture is adopted, can be dispensed with; thirdly, that the cyst is more completely emptied than in the usual way; and fourthly, that syncope is much less likely to occur; for as this takes place from the want of support which the diaphragm experiences owing to the sinking of the tumour, so this want is less felt in the recumbent posture, and it is only necessary to mention that this woman has derived some relief

from the operation, is stronger than she was, and has been freed from the feeling of distension, pain, and dyspnœa; but this relief can only be rendered as temporary, for it is much to be feared that not only will the sac soon re-fill but that the smaller cysts will not long remain dormant.

ART. 143.—*On Inflammatory and Non-Inflammatory Ruptures of Ovarian Dropsical Cysts.* By Professor SIMPSON, M.D.

(*Edinburgh Monthly Journal of Medical Science*, Dec. 1852.)

The following are the conclusions of an article upon this subject, which article forms part of the author's valuable "Contributions to obstetric pathology and practice."

1. The cysts forming an ovarian dropsy, occasionally rupture, *first*, from inflammatory effusion into and distension of their cavities; or, *secondly*, (the contents of the cysts being only the common bland secretion of such cysts, and unmixed with any inflammatory matter,) they may rupture from mere over-dilatation and gradual attenuation of their coats, or under sudden mechanical pressure and injury.

2. When a cyst ruptures from the effects of inflammation, or contains within it at the time of rupture inflammatory secretions and materials, the escaping fluid, if effused into the cavity of the peritoneum, is always liable to be followed by dangerous, and generally fatal, peritonitis.

3. If, however, a cyst bursts into the peritoneum under mechanical injury, or in consequence of simple laceration from over-distension of its cavity, and the fluid effused into the sac of the peritoneum, is consequently not commixed with inflammatory secretion, there is little or no great tendency to peritonitis.

4. Sometimes, indeed, when thus a non-inflamed ovarian cyst ruptures into the cavity of the peritoneum, the life of the patient is preserved, or at least prolonged, by this accident.

5. When an ovarian cyst ruptures into a mucous canal, or upon the cutaneous surface, the safety or danger attendant on the laceration is not regulated by the inflamed or non-inflamed character of the effused fluid.

6. In cases in which the fluid of an ovarian cyst obtains an outlet by a mucous canal, or by the skin, a temporary or more permanent reduction of the tumour and comparative cure of it may be the consequence.

Lastly, let me add that, as in many cases and points the surgery of art is an imitation of the surgery of nature, possibly the artificial repetition and establishment of the above modes of relief, if they could be imitated safely and certainly, may yet be found capable of temporarily arresting, if not curing, ovarian dropsies in some appropriate cases, and more particularly in instances in which the bulk of the tumour is formed by one large preponderating cyst.

ART. 144.—*On the Pathology and Treatment of Sanguineous Pelvic Cysts.* By Dr. TILT.

(*Lancet*, Dec. 11, 1852.)

Sanguineous pelvic cysts constitute a variety of pelvic tumours, on which the French pathologists have during the last year thrown great light, the cyst being in such cases formed by a considerable quantity of blood effused in the pelvic portion of the peritoneum, or externally to the peritoneum, so as to constitute extra-peritoneal or intra-

peritoneal cysts. Dr. Tilt first related several cases from his own practice, from that of Dr. Bell, of Glasgow, and from that of Dr. H. Bennet; by which it appeared that the disease was preceded by menstrual irregularities, and that its origin generally coincided with the suppression or the non-appearance of the catamenia; after which ensued hypogastric swelling, then local pelvic peritonitis, on the subsidence of which a globular tumour was found to fill, more or less, the pelvis, interfering with the passage of both fæces and urine. Dr. Tilt then elucidated the pathology of the previous cases by several others which had terminated fatally in the Paris hospitals, and where the post-mortem examinations were exhibited to the Société de Chirurgie of Paris. The causes of extra-peritoneal sanguineous cysts were extremely obscure. In a case related in 'Guy's Hospital Reports,' the effusion of blood was caused by the rupture of an aneurismal sac. In another, occurring in the practice of the celebrated Mangolin, it was caused by the rupture of varicose sub-peritoneal veins. Light had been thrown on the causes of the intra-peritoneal variety by the post-mortem appearance of a patient under the care of Denonvilliers, of the Hôpital St. Marguerite, in Paris. The blood was found to have come from several small ovarian cavities, some of which still contained blood-clots; and, in discussing the case, Lenoir, Nelaton, and other surgeons of eminence, admitted that in this and similar cases the pelvic tumour was formed by an ovarian hæmorrhage taking place during the process of ovulation. Dr. Tilt admitted the explanation, and confirmed it by the fact that during the process of ovulation the ovaries greatly increased in size; that in the normal state the blood-clot taking the place of the ovum was about the size of a cherry; that microscopical observers had sometimes found the capillary vessels much enlarged and broken in the vicinity of the vesicle, and the ovarian tissue so softened that it would tear on the slightest touch, and let the blood-clot escape. Dr. Tilt gave a still surer footing to the views of the French pathologists on this point, by relating a case which had lately occurred in the Lyons hospital, where, after flooding at three successive menstrual periods, peritonitis supervened, and on opening the body, a blood-clot of the size of a horse-bean was found protruding between the rent lips of the ovarian follicle. Having thus established the pathology of intra-peritoneal sanguineous cysts, Dr. Tilt proceeded to illustrate their history by other interesting cases which had lately occurred in the Paris hospitals. One, for instance, was mistaken by Malgaigne for a fibrous uterine tumour. He slit up the neck of the womb to enucleate the supposed tumour, but, finding his mistake, he punctured it, and gave issue to a large quantity of syrupy blood. Hæmorrhage from the wounded artery of the neck of the womb could not be controlled, and the patient died. Another case was mistaken for ovarian dropsy, others for metritis. Dr. Tilt observed that sanguineous pelvic cysts did not usually terminate fatally, but often by resolution; the lining membrane of the cyst absorbing its contents, which thus became thicker and thicker, and the tumour diminished. Sometimes, however, the contents were evacuated by rupture of the cyst per rectum or per vaginam. Dr. Tilt recom-

mended the cysts to be left to themselves when small, and to increase absorption by moderate venesection, purgatives, and low diet; but if they attained a considerable volume, so as to interfere much with micturition and defæcation, he advised the tumour to be punctured per vaginam with a long trocar. 1st. Because this plan presents a better chance of avoiding wounding the arteries. 2d. Because the trocar being left in the wound permits the gradual evacuation of the blood. 3d. Because it allows the possibility of making injections. But Dr. Tilt likewise admitted the necessity of widely opening the tumour should it contain large fibrinous clots, or if it gave rise to a fetid discharge. With regard to the frequency of the disease, Dr. Tilt did not consider it a common occurrence; and although some twenty cases had been published during the past year by eminent French surgeons or obstetric practitioners, it was so little known in England that several talented physician-accoucheurs had assured the author that they had not met with it. Dr. Tilt, therefore, submitted, that they might have been mistaken for other complaints; for metritis and incipient pelvic abscess, when the collection of blood is small; for an ovarian tumour, when the collection is very considerable; and sometimes for pelvic abscesses, as in Dr. Bell's case, when the blood-clots were mixed with pus. He therefore believed that similar cases might be found recorded in English journals by those who had time and patience to hunt for them.

## (c.) CONCERNING THE DISEASES OF CHILDREN.

ART. 145.—*On the effect of Prolonged Horizontal Posture in the production of the great mortality in Foundling Hospitals.*
By M. HERVIEUX.

(*L'Union Médicale*, 139, 140, 1852; and *Medico-Chir. Rev.*, Jan. 1853.)

M. Hervieux observes, that persons visiting the *crèche* of the Paris Foundling Hospital, admire the exquisite cleanliness, free ventilation, and mild temperature of that vast apartment. Still, of about 4000 infants annually admitted, about 3000, *i. e.* 75 per cent., die; and to explain this fearful mortality, the impoverishment of the blood of these victims of debauchery and poverty, their over-crowding, and the insufficiency of their nursing, have been referred to. All these have something to do with the result; but a chief cause of its production, hitherto over-looked, is the too prolonged maintenance of the horizontal posture. Each child is taken up, fed, and changed four times daily, and again at night when it cries. Suppose this operation is performed six times on an average, as it only occupies about twenty minutes, the infant is lying on its back for twenty-two out of the twenty-four hours, quite unable at this age to change its position. Motion and exercise are essential to the well-being of the infant, and its proper place is its nurse's bosom, the warmth of which is imparted to it.

The children of the *crèche* die, in fact, of cold and hunger. Owing to the continuance of the horizontal posture, the temperature of the

body becomes lowered, the limbs chilled, the circulation languid, and the respiration embarrassed. All the principal functions languish, the skin becomes indurated, and visceral congestions take place. Some of the children perish from sclerema, some from the so-called pneumonias, which are only sanguineous stases, and others from various serous effusions or hæmorrhages. The definitive cause of all these disordered conditions is *cold*, not cold engendered by the diminished temperature of the surrounding medium, but cold resulting from their prolonged immovability.

We have also to inquire whether feeding infants four, six, or even eight times a day is sufficient. Books tell us that they should only be suckled at regular intervals, every three or four, or sometimes two hours; but any one practically acquainted with the rearing of young infants, must see the fallacy of this. In fact, they suck some thirty or forty times a day, absorbing, according to the calculations of Guillot and Lamperière, from three to four pints of milk. This suits them admirably, for in the first two or three years they have to acquire one half the height and weight they will gain during the rest of their lives; and the limiting them to the periods and quantities suitable for older subjects is unphysiological and mischievous. It has been said that this so-called excess of food gives rise to the gastro-enteric affections, so frequently met with at this period of life; but, in fact, such diseases are not met with in private practice, either in the infants of the rich or of the poor, who are often so inordinately suckled, while the body of every child brought from the hospital exhibits more or less intense signs of acute or chronic gastro-enteritis. The practice of bringing up the children by hand has been assigned as a cause of the great mortality: but nothing similar to it is found among the children so brought up in the worst parts of Paris, where they, however, get abundance of milk and good nursing. At present the eighty-four infants at the *crèche* have only nine nurses and two night nurses to attend to them; while M. Hervieux considers that one woman cannot pay suitable attention to more than two infants.

### Art. 146.—*On the Purulent Diathesis in Newly-born Children.* By Dr. Hervieux.

(*Archiv Gén. de Méd.*, April, 1853.)

Dr. Hervieux relates several instances of this affection under the two heads of a visceral or internal form, and a cellulo-articular or external form. He met with nine instances of the kind in the Enfants trouvés during the year 1845, but he does not enter into any particulars that will enable us to judge whether or not they are dependent upon or influenced by that purulent tendency which seems to prevail on all hands at the present time.

The symptoms appear to be very obscure, both generally and locally. There were no evident rigors, no yellowness of the skin, no delirium, no altered state in a wound, and no other symptoms such as are usually found in the adult; an elevated temperature of the skin, an extremely frequent and feeble, or an altogether imperceptible

tible pulse, appear to have been the only constant symptoms. The little patients were utterly prostrate, and lay silent and motionless in their cradles, uttering plaintive cries if disturbed in any way. The local symptoms varied with the viscus or joint affected; but these, as we have already said, were very masked and obscure.

ART. 147.—*On Scleroma or Skin-Bound Disease (Induration of the Areolar Tissue) in New-born Infants.* By Professor PASTORELLA and M. CLERTAN, of Dijon.

(*Gaz. Med. Ital. Fed. Toscana*, 1852, p. 258; *Journal des Connais. Méd.*, Nov. 1852; and *Dublin Quarterly Journal of Medicine*, Feb. 1853.)

Professor Pastorelli regards scleroma as a primary, non-inflammatory disease of the skin, chiefly of the lymphatic textures of the skin; and the treatment he recommends consists in mercurial inunction, and baths of warm milk, repeated every 3 or 4 hours, for three or four times.

M. Clertan reports two cases, which were rapidly cured by inunction with camphorated ointment, and fomentation with warm decoction of cinchona bark.

Induration of the areolar tissue, writes Professor Pastorella, is a disease almost peculiar to foundlings. It very seldom occurs before the fourth day after birth, rarely after the fifteenth, and never later than the fourth week. It comes on unexpectedly, or its approach is announced merely by an icteric discoloration of the skin. Suddenly the legs become slightly reddened, their temperature falls; there is no indication of pain, and the tissues gradually attain the hardness of marble. The affection subsequently extends in a similar manner to the arms, abdomen, and thorax, so that the patient in a short time becomes entirely rigid. The skin meanwhile has become yellow; the voice is shrill and screaming; the appetite fails; the bowels are confined; difficulty of breathing supervenes, followed by coma, and death ensues between the tenth and fifteenth day of the malady. Inflammation of the umbilical ring, and erysipelas of the genitals and inside of the thighs, are two complications: the former an unfavorable and not unfrequent symptom; the latter of rare occurrence, but an almost infallible presage of death.

* * * * *

Scleroma usually presents itself under a twofold aspect: at one time it is œdematous or serous, the integuments being moderately firm and infiltrated with serum, which flows abundantly from incisions made in them; at another it is solid or adipose, the skin being more firm, remaining dry when cut, and appearing to be infiltrated with an exudation not unlike the congealed fat of animals. In both forms Gardien found the glands and lymphatics constantly enlarged. The author has seen, in addition, venous congestion in the membranes of the brain, the lungs, and the liver, and the right side of the heart gorged with black and uncoagulated blood; but he never found either pulmonary hepatisation or signs of inflammation in the gastro-intestinal tube, nor did he meet a case in which there was an open foramen ovale.

## Art. 148.—*On the Epidemic Mental Diseases of Children.* By R. H. Cooke, Esq.

(*Journal of Psychol. Medicine*, Jan. 1853.)

The main object of this paper is to illustrate the mental susceptibilities of childhood to foreign influences, and the danger of over-excitement at an early age. As showing this strange susceptibility, and the manner in which it may be wrought upon, the following curious facts, chiefly from the German of Hecker, are introduced:—

How widely spread, and how morbid an excitement may seize the youthful population under favouring influences is remarkably evinced in the children's crusade of the thirteenth century.

"At this period, the Holy Land had long been restored to the sway of the Saracens. Vexation for the loss, and an earnest desire for the recovery of this dearest possession of Christendom had spread with renewed earnestness among all the nations of the west. But the emissaries of Rome found no sympathy among the men, and not an arm was raised. They would not give their property and lives a useless sacrifice in the repeated effort of an achievement in which the skill and bravery of the past century had failed.

"But the children's minds were kindled with brilliant dreams of the Holy Land, and of miraculous victories over the infidels, and it was impossible that some outburst of feeling could be long delayed.

"The first impulse was given by Etienne, a shepherd-boy of Cloies, near Vendôme, who must have possessed great address and talents. He gave himself out for an ambassador of Christ, who, he said, had appeared to him in a foreign garb, had received food at his hand, and given him a letter to the king. His sheep were said to have knelt down before him, to worship him, a miracle which perhaps was hardly needed to encircle him with the halo of sanctity. The shepherd-boys of the neighbourhood collected about him, and soon more than 30,000 persons streamed together to accept his revelations, and be transported by his preaching. He wrought miracles in St. Denys, the reports of which circulated with incredible rapidity through France. All rendered him homage, as the saint of the day and the messenger of God.

"The king, Philippe Auguste, alarmed at the excitement of so formidable a multitude, forbad the assemblies, with the sanction of the university of Paris. He might as well have forbidden an earthquake. Every day there started up new eight or ten-year old prophets, who preached, worked miracles, collected troops of young enthusiasts, and conducted them to the holy Etienne.

"To the inquiries put to these young pilgrims (for they were mostly clad in pilgrim's weeds) whither they were going, they replied, as with one voice, 'To God.' They went in orderly processions, headed with oriflammes; many carried wax candles, crosses, and censers, and they sang hymns without intermission, with most intense devotion, and to new melodies. In these hymns they often repeated the words, 'Lord, raise up Christendom, and give us again the true cross.' It is to be regretted that the witnesses of a movement which thus ingulfed the whole of the youthful population, have not recorded either these hymns or the music to which they were sung. Even the few words which have been preserved have not come down to us in the vernacular dialect.

"It cannot be doubted that thus many of the fairest flowers of national

poetry have been lost, however overwrought and morbid the excitement which produced them.*

"Many of the parents partook of the delusion, and furnished their children with arms and armour, or clad them in pilgrim's garb, and gave them a staff and wallet for their long journey. Some, who were kept back by force, wept day and night, and wasted away with fretting, or fell ill with nervous disorders, till they were allowed to go. Others made light of bolts and bars, and found means to elude the utmost vigilance of their attendants, that they might join the representatives of the holy Etienne, and at last behold that great crusade-preacher himself. All distinction of ranks was confounded: the children of counts and barons fled equally with those of burgesses and the lowest peasants. The richer parents, however, sent guides to accompany their children, many of whom it is probable were thus quietly rescued.

"Within a month from the commencement of the commotion, there was assembled at Vendôme an immense host of boys armed and unarmed, a few of them on horse, and among them not a few girls in male attire. The total number is reckoned at 30,000.

"They all acknowledged the beloved Etienne as their captain and guide to the Holy Land, which they purposed to rescue from the Saracens. They put him in a splendid chariot; the noblest of the youths, in splendid equestrian accoutrements, formed his body guard, which indeed he needed, to restrain the ardour of his followers, who blessed themselves if they could but get a thread from his robe, when their devotion and enthusiasm had been inflamed by his preaching. On some of these occasions, a few were crushed to death in the violence of the press.

"In July, the extraordinary procession set out for Marseilles. It was hot and dry; but none of the difficulties of the pilgrimage, neither the drought on the hot and arid plains of Provence, nor the scarcity to which the poor must have been exposed after the first few days of the journey, could quench the ardour of their devotion and zeal. 'To Jerusalem!' was their cry, when they were asked of the astonished beholders whither they were going; and none doubted Etienne's promise that the sea should divide before them, and they should go to the holy land dry-shod. Disappointed of this expectation, on their arrival at Marseilles, they thankfully accepted the offer of two merchants of the city to convey them to Palestine without charge. They were still sufficiently numerous to fill seven large ships. Shortly after they set sail, two of the ships were wrecked in the bay, and not a soul saved. The remaining five were taken to Bugia and Alexandria, and all the children sold to the Saracens. It is satisfactory to know that the two merchants did not escape retributive justice. They were hanged in Sicily for a different offence.

"At the same time a similar excitement sprang up in Germany, and repeated almost to the letter the incidents of the French boy crusade—the number of those drawn into it being probably somewhat larger. They were under two or more leaders, and went in two bodies toward the coast. It is probable that at least the half must have perished by the way, for the passes of the Alps were at that time very difficult, especially for such ill-provided travellers; while the greater number of adults and women that attached themselves to these expeditions must have made the moral effects more disastrous.

"One of the detachments reached Genoa in August; the other entered Italy

* Three or four years ago one of the Crusaders' hymns, with its melody, was discovered in Westphalia. It is characterized as far superior to any other music of that age which has descended to our times. It will be found in one of the numbers of *Evangelical Christendom* for 1850.

by way of Lombardy. Their fate was various. A large number met the same fate as the children of Etienne's army, being kidnapped in the Italian sea-port towns, and sold into slavery; some entered into service in Italy; some fell victims to seduction or violence, and abandoned themselves to infamy; some of noble birth established themselves in patrician families in Genoa. A very few only returned home."

Hecker relates, on the testimony of a contemporary chronicler, a monk of Pirna, that, twenty-five years later, a similar movement seized the youthful population of Erfurt. Above a thousand of these assembled on a particular day, unknown to their parents, left the town together, and went dancing and leaping to Arnstadt. They were fetched back the next day, but none of them could say who had enticed them, or wherefore they had gone. This appears to have been more connected with bodily indisposition than the boy crusades. Many of the children continued ill long afterwards with chorea and epilepsy. Hecker conjectures (I do not know on what ground) that the proximate cause of this event was the religious solemnities connected with the canonization of a langravine of Thuringia. From its proximity in time to the former event, he very reasonably supposes an exciteable state of the "child-world" at this epoch.

More than two hundred years afterwards, in the year 1458, a time when the St. Vitus' dance was very prevalent, more than one hundred children of Hall, in Suabia, set out, against the will of their parents, on a pilgrimage to Mont St. Michel, in Normandy. As all attempts to restrain them were fruitless, or hazardous, the corporation provided them a guide, and an ass to carry their baggage. They made the journey, offered their devotions to the archangel Michael, and returned.

## Art. 149.—*On Spasms of the Glottis.* By Dr. Lederer.

(*Journ. für Kinderkr.*, xix, 1, 2, 1852; and *Schm. Jahrb.*, 2, 1852.)

Among the reports of the clinique for the diseases of children at Vienna, are the following interesting particulars in connection with spasms of the glottis, from January 1850 to June 1852:

Among 96 children suffering from spasm of the glottis, 92 had atrophy of the cranium, some with and some without hypertrophy of the brain; 1 acute hydrocephalus, 1 chronic wasting of the brain, and of the rest 3 were rachitic without craneo-tabes, and one had congenital disease of the heart.

The ages of these children were:—

| | | | | | |
|---|---|---|---|---|---|
| 2 | weeks old | 2 | 12 | months old | 11 |
| 1 | month | 2 | 13 | ,, | 2 |
| 2 | ,, | 2 | 14 | ,, | 5 |
| 3 | ,, | 2 | 15 | ,, | 1 |
| 4 | ,, | 4 | 16 | ,, | 2 |
| 5 | ,, | 7 | 17 | ,, | 1 |
| 6 | ,, | 7 | 18 | ,, | 3 |
| 7 | ,, | 7 | 20 | ,, | 1 |
| 8 | ,, | 10 | 21 | ,, | 1 |
| 9 | ,, | 7 | 22 | ,, | 1 |
| 10 | ,, | 6 | 2 | years old | 6 |
| 11 | ,, | 5 | 3 | ,, | 1 |

The numbers of the cases in the different months of the year were in—

| | | | |
|---|---|---|---|
| January | 10 | July | 1 |
| February | 20 | August | 0 |
| March | 22 | September | 1 |
| April | 13 | October | 2 |
| May | 10 | November | 0 |
| June | 4 | December | 7 |

### Art. 150.—*Removal of Obstructing Mucus in the Suffocative Bronchitis of Children.* By M. Valleix.

(*L'Union Méd.* No. 48; *Medico-Chir. Rev.*, Oct. 1852.)

In an instructive case which he relates, M. Valleix draws attention to the importance of mechanically clearing away the mucus from the throats of infants, in the suffocative paroxysms observed in the generalized bronchitis so fatal to young children. As soon as the child assumes a violaceous appearance, and suffocation seems imminent, the little finger should be passed along the back of the tongue. The child, closing its jaws, resists strongly, but the finger should be gradually advanced. When it reaches the isthmus, the child opens its mouth, and we should then pass on behind the epiglottis, so as to bring the pulp of the finger several times over the orifice of the larynx. This produces efforts at coughing and vomiting, and the mucus is expelled from the air-passages, a part being drawn out with the finger, and the rest swallowed. The child appears, after this little operation, much flushed and agitated, and almost suffocated; but it soon becomes calm, until renewed signs of asphyxia call for a repetition of the procedure. In the case which M. Valleix relates, apparent death, after one of these paroxysms, was successfully treated by artificial respiration, the employment of which he strongly recommends in similar cases.

### Art. 151.—*On Syphilitic Affection of the Liver in Children.* By Dr. Böhmer.

(*Henle's Zeitsch.*, Bd. iii, Ht. 1, and *Medico-Chir. Rev.*, April, 1853.)

Gubler stated, four years ago, that some children, born with syphilis, were affected with a "fibro-plastic disorganization" of the liver; and Depaul, the discoverer of the alleged syphilitic lung-affection, affirms that he has observed something similar. Dittrich has, more lately, also declared that the liver is infected in utero in some syphilitic fœtuses. The author having met with an instance of this kind, which was declared by Dittrich himself to be an instance of the congenital syphilitic affection of the liver, narrates the case, and appends some remarks in opposition to this presumed syphilitic origin. He also states, that in order to investigate this subject, he examined all the syphilitic children who died at the Viennese Foundling Hospital. He was, however, unable to find this hepatic affection in any other instance. In the case referred to, there was exudation on the surface

of the liver, uniting it to the diaphragm, and forming a pseudo-membrane of areolar tissue, which passed also into the liver, but did not especially implicate the portal canals.

The author then passes on to narrate shortly 14 cases in adults, communicated to him by Dr. Sigmund, the director of the Syphilitic Hospital at Vienna, in which there was liver affection. Unfortunately, it is not stated to what number of deaths these 14 cases corresponded, but it is said that this was considerable. In these 14 syphilitic adults the liver was in the states described as "granular liver," "cirrhosis," "hepatitis adhæsiva," "pylephlebitis," and with fibro-cellular coatings of the surface. In all these cases, Dr. Böhmer considers that there was nothing *specific—i. e.*, nothing that does not present itself daily in the livers of men who are not syphilitic. He enters into a long polemic on this point, and discusses, in connection with it, the various pathological conditions of the liver comprised under the terms cirrhosis, pylephlebitis, and adhesive hepatitis.

ART. 152.—*On Obstruction of the Urethra as a cause of Irritability of the Bladder in Children.* By CHR. FLEMING, A.M., M.D., M.R.I.A., Surgeon to the Richmond Hospital.

(*Dublin Quarterly Journal of Medicine,* Feb. 1853.)

These remarks occur in a paper having the title of "Notes on the Urinary Diseases and Morbid Conditions of the Urine in Children." They are made upon cases occuring in both sexes:

The first case is one of congenital adhesion of the labia pudendi in a child aged two years and some months, and accompanied by a peculiar state of the orifice of the urethra. This child was in progress of recovery from anasarca after scarlatina, and was observed by her mother, some days before my visit, to have repeated, painful, and urgent calls to pass water, which was discharged with considerable and forcing efforts, and the paroxysms were attended with violent screeching. She was also observed repeatedly to apply her hand to the pudenda. The urine gradually assumed a deeply-coloured brownish and sooty hue, and deposited, on settling, that cloudy deposit so characteristic of the albuminous nephritis attendant on the exanthemata. The quantity of urine, which, at the commencement of the symptoms of anasarca, had materially diminished, and, as is often the case, was accompanied by irritability of the bladder for the last fortnight, was under treatment remarkably increased; but until the within-mentioned period there had not been any uneasiness in micturation.

The night previous to my visit, irritability of the bladder had supervened, and was excessive; the cries and suffering of the child were most acute, and considerable hæmaturia was present. I had been frequently in attendance on the child for the ordinary ailments of children during dentition, and had not on any occasion observed any indication of urinary distress. The almost sudden supervention of the above symptoms, their decidedly local character, and their extreme severity, led me to suspect the presence of calculus in the bladder or in the urethra, with the view to the ascertainment of which I proceeded, when, to my surprise, I found the labia adherent from before backwards, with the exception of two openings through which little more than

the point of a probe could be introduced; one of them existed at the forepart, behind the clitoris, and the other posteriorly, in the site of the fourchette. The intermediate junction was very consistent in front, without the presence of any raphè, and, as it approached the perineum, resolved itself into a membranous line almost transparent.

During my examination a vesical paroxysm came on, when I had an opportunity of witnessing the mode of the passage of the urine, almost *guttatim* through the openings alluded to, with a marked protrusion of the intermediate band. The difficulty of the case was now solved; the band was divided; but the orifice of the urethra could not be seen, and every effort to get assistance from the child failed; she would not pass water, and the hæmorrhage obscuring the opening of the vagina, further interference was then dispensed with.

The symptoms of irritable bladder subsided, when, on the eighth day, a disposition to their return manifested themselves. Now, on more minute examination, a small cribriform veil of mucous membrane was detected, cloaking the orifice of the urethra, and continued over it from the prepuce of the clitoris. This was divided, and all symptoms of irritation rapidly subsided.

There are many interesting features in this case, but it is sufficiently demonstrative of the object in view at present. The sufferings of the child would not have been alleviated by other means than by those adopted, and, no doubt, to say the least, the irritability of the bladder would have been persistent, and have necessarily led to further mischief. I mean not to assert that these congenital adhesions of the labia always produce the above symptoms. I know the contrary to be the fact, both here and when they are accidentally adventitious, and particularly if the orifice of the urethra is free; but the recollection of the possible involving of the latter, in either lesion, will put the surgeon on his guard where symptoms such as those I have described are persistent, and do not yield to ordinary treatment. I have divided these membranous septa traversing the nymphæ, and the amount of vesical irritation was hardly appreciable. However, when we reflect on the cases which present themselves, and those not very few, in adult life, of irritable bladder, ostensibly traceable to warty or other growths at or in the vicinity of the urethra and orifice of the vagina, it may not, perhaps, lessen the importance attached to this subject, as demanding early interference; and this especially when from any cause the quantity or the quality of the urine should undergo any morbid change, and hence be productive of more or less irritation.

I must now pass on to the case of boys. Where local circumstances exist, to which are distinctly referable the symptoms I have above enumerated as attendant on irritable bladder, the value of the remark of Sir Benjamin Brodie is particularly striking, namely, to "combine with the observation of symptoms the study of morbid anatomy" (we may here substitute "abnormal anatomy"), otherwise we are apt to confound with one another affections which are essentially different, under the general appellation of irritable bladder, and torture our patient with remedies worse than useless. I put completely out of the question, for the present, any derangement in the healthy character of the urinary secretion. I will assume that the surgeon is acquainted with it, and that he has adopted the requisite remedial agents; but he is yet unsuccessful; the irritability continues, and if any change has taken place, all symptoms are aggravated, and this although the urine may be restored to its normal state. Whence the cause of this? Let

the surgeon examine the penis, and he will frequently get a clue; let him place the child before him, and make him pass water, and let him cast his eye on the appearance of the penis, both before and during the passage of the urine. In not a few of such cases he will find that the orifice of the prepuce is at a considerable distance from the extreme end of the glans; that that orifice is so small as to admit with difficulty the end of an ordinary probe, and that when the child makes water, the urine does not escape in a uniform stream; that it is scattered, and that during its transit the prepuce is distended into a pouch by the accumulation of the urine within it, the glans being at a considerable distance behind. Cases of this kind are really so frequent, that I do not deem it necessary to specify them; and I venture to state, that if attention is directed to the fact, its practical importance will be admitted. Such a state of organ will not necessarily entail symptoms of irritable bladder. The contrary, as in the case of the female child already noted, may be the fact, but I do affirm, that where deranged action or function of the urinary system arises, no matter from what cause, that the presence of it will be found to be often attributable to the lesion. I mentioned that no *permanent* cure will or can be affected, if it is overlooked: nay more, on a careful revision of the cases which came under my observation, I am disposed to go farther, and to state, that on the supervention of disease, a more aggravated character is traceable to it. Who will deny that cystitis and its uncertain consequences may not arise from it; that stricture may not arise from it; that retention of urine, and that calculus, may not be superinduced by it? Cases illustrative of this will appear in the sequel.

As regards the treatment of such cases, the division of the prepuce may be ultimately required; but from the results of such operation in children, trifling as it is, I am disposed to prefer mechanical dilatation of the orifice of the prepuce by the occasional insertion of a piece of prepared sponge within it for an hour or so, or by the withdrawal of the prepuce on the glans during micturition. Much success has attended this expedient.

One of the most distressing cases I have witnessed of irritable bladder, arising from these abnormal defects, was where an excoriation took place at the orifice of the urethra, in that deformity termed hypospadias. The mother was actually ignorant of the condition of the organ present; ulceration had supervened, and the subsequent cicatrization had so completely closed the orifice that it would admit only the finest probe. The severe distress present was removed by a slight division of the delicate membrane surrounding the orifice, and the securing of its permanent patency by a piece of bougie.

### Art. 153.—*Chloroform in certain cases of Retention of Urine and Fæces in Children.* By Dr. Guisard.

(*L'Union Méd.*, No. 34, 1852.)

The following case exemplifies a not unfrequent occurrence in which chloroform may be employed with advantage.

My child, a boy of three years, attacked by a painful phymosis, could not or rather would not perform the acts of micturition and defecation, from an apprehension of the excessive pains which the muscular contractions necessary to these acts would create in the diseased part. The consequence was a retention of urine and fecal matters. The 8th of July last he was upon the point of being operated upon for his phymosis by my confrère and

friend, M. Rigal. In order to relieve the little patient of the pain of the operation, we administered chloroform. Scarcely had my child become insensible, and fallen into a state of general resolution, when the urine escaped by a large rapid jet, and the fecal matters, diluted by several enemata given in the morning, soon followed with no less impetuosity. The bladder and the rectum were completely emptied. Have we not discovered, exclaimed M. Rigal and myself, much astonished, a new and precious therapeutic resource in cases of spasmodic retention either of the urine or fecal matters?

The next day, twenty-fours after, my little patient, still prevented by fear of the violent pains, had not urinated. Instead of having recourse, as previously, to the sound and the able hand of M. Rigal, in presence of a full bladder, tympanism of the abdomen, burning heat of the skin, the complaints of the child, his resistance to micturition in spite of entreaties, promises and threats, I laid him upon his mother's lap and administered by force a small quantity of chloroform. Scarcely had his limbs and the whole body, yielding to the action of the anæsthetic agent, fallen into a state of resolution, when the child urinated, as upon the previous day, in a perfect manner. But what was remarkable, the child was not completely insensible: he had preserved his intelligence and consciousness of exterior life, which was manifested by his saying to us that it no longer hurt him to make water.

# REPORTS

ON THE

# PROGRESS OF THE MEDICAL SCIENCES.

*January—June*, 1853.

The intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which has been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

# I.

## REPORT ON THE PROGRESS OF PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

1. *Dr. Webster on the Sanitary Condition of England during* 1852.* —The elaborate returns of deaths in the different divisions, counties, and districts of England, compiled by the Registrar General, are so much valued by medical practitioners, and others taking an interest in all questions relative to the state of public health, in this part of the British Empire, that it now seems superfluous to enlarge upon the importance or utility of the above official documents. As, however, these tables may not be accessible to every reader of the present Abstract, I am led to believe some outline of the chief facts recorded during the past year will prove interesting.

The total mortality reported throughout England and Wales in 1852, amounted to 407,938 deaths, or beyond the average of former years; with the exception of 1847 and 1849, when the aggregate fatal cases became more numerous than had ever been observed during modern times. In the first-named period, which was remarkably unhealthy on account of the prevalence of typhus and influenza, the deaths by all diseases were 423,304; whilst in 1849, known as the great cholera year, 440,839 persons died, being 41,016 beyond the mortality of 1848, but giving an increase of 71,853 fatal cases if contrasted with 1850, which proved in comparison a much healthier season, seeing only 368,986 deaths were then recorded; whilst the total amount again rose, in 1851, to 395,933, being an excess of 12,005, when placed in juxta position with the previous twelve months; and, lastly, if the mortality of 1852 be also compared with 1850, an augmentation of 38,952 fatal cases appear to have occurred in the year just terminated.

Respecting the 407,938 deaths reported throughout the four quarters ending last December, it may be remarked, in reference to the mortality of the different periods now mentioned, that some discrepancy, although not very considerable, was noticed in the actual number of deaths met with during the various seasons. To illustrate this point I commence with the first quarter of 1852, when it appears 106,682 human beings died by all causes in England and Wales during the months of January, February, and March, but which amount was

* We are indebted for this admirable Report to the kindness of Dr. Webster, F.R.S.—Eds.

rather under the average mortality of previous parallel seasons, notwithstanding the augmented sickness noticed in particular localities. Thus, throughout several southern districts, scarlatina, smallpox, and fever were very prevalent, as also measles and pertussis, which maladies raged severely, especially at Plymouth and its neighbourhood, whilst variola prevailed very extensively in Bath. In Lincolnshire, Nottinghamshire, and Derbyshire, the health of the population was reported better than usual, although residents in the town of Derby suffered much from smallpox. In Lancashire and Cheshire the mortality became rather augmented beyond the average; diseases of the respiratory organs having occurred to some extent at Liverpool, whilst typhus prevailed in Clitheroe. Some districts of Yorkshire, as, for instance, Leeds, seemed less healthy than usual; whilst the deaths in Sheffield exceeded the ordinary rate, smallpox having proved very prevalent and fatal, in consequence of vaccination being greatly neglected. Throughout the northern counties of Durham, Northumberland, and Westmoreland, the mortality exceeds the average, especially in Kendal, where scarlatina was exceedingly fatal. In North Wales the deaths were below, but in South Wales above the ordinary rate noticed in corresponding previous quarters, arising in part from scarlatina, which had been rife in the low marshy land near Chepstow and its vicinity; as also at Cardiff, where typhus was so prevalent as even to affect previously healthy labourers, chiefly from their living in over-crowded and already infected lodging-houses.

The mortality recorded during the second quarter of last year, which ended in June, ranged slightly above the average of former parallel seasons; the recent excess of deaths being chiefly in town districts, contra-distinguished to localities comprising villages and country parishes. For example, in districts containing large towns, and having a population of 7,795,882 persons, the fatal cases amounted to 48,357, or one death in every 161 residents; whereas in country localities, having a population of 9,301,190, the deaths did not exceed 52,456; that is, only one fatal case to every 177 inhabitants. Although smallpox, scarlatina, pertussis, and typhus prevailed to some extent in many parts of England, besides the metropolis, nevertheless, the total deaths, from all causes, were actually fewer during the three months terminating last June, than throughout the quarter immediately previous; the numbers then recorded being 100,813, instead of 106,682, which occurred in the former period.

During the third quarter of last year, embracing July, August, and September, the number of deaths greatly exceeded the average mortality of corresponding summers, unless in the same months of 1846 and 1849, when cholera and diarrhœa were extensively epidemic, especially in the latter year. The total deaths reported during the quarter now under consideration, amounted to 100,497, being an increase of 8897 fatal cases beyond the number met with, during the parallel season of 1851; and of 14,651 if contrasted with the same period of 1850. Speaking generally, in reference to particular districts, it appears that, throughout the south eastern counties of England, especially in some parts of Kent, bilious fever and diarrhœa

were very prevalent; the former disease often exhibiting the lowest type, whilst extreme prostration, petechiæ, aphtha, and profuse purging supervened very early in the attacks. Typhus and ague, on the other hand, were very common in the sub-district of Ely: whilst an increased mortality was reported at Bedford and Peterborough. Throughout Gloucester, Stafford, and Warwickshire, the deaths ranged above the average number; whereas, in Shropshire, the amount fell below that of former seasons. Again, in the north-midland counties of Leicester, Lincoln, Nottingham, and Derby, the mortality exceeded the ordinary amount: as also in Cheshire and the county of Lancaster, where a high rate was experienced. Yorkshire likewise appears to have been more unhealthy than usual; whilst the counties of Durham and Northumberland show a considerable increase; but this was slight in Cumberland and Westmoreland. Amongst the inhabitants of Wales the mortality, when compared with that reported during the summer quarter of 1851, was rather in excess: which result, it is stated, arose in consequence of scarlatina, variola, typhus, and diarrhœa having prevailed to some extent, in several districts of the Principality.

Having thus adverted to the prominent points characterising the sanitary condition of England during the first nine months of 1852, it only remains to add that, the total deaths recorded during the last quarter, ranged rather higher than the average of several previous corresponding seasons: as, for instance, those in 1848-50-51, each of which periods it exceeded, although the rate was much lower than that recorded in 1846-47. This statement is proved by the fact of 99,946 deaths having taken place during the three months ending last December, contra-distinguished to 91,847 in the parallel quarter of 1850, and of 99,248 during the same period of 1851, whereby the recent excess is slight. One feature in reference to the mortality of this quarter, that is of 1852, deserves special mention, on account of its peculiarity: namely, the total deaths reported from town districts fell *below* the average, while the mortality experienced in country localities ranged somewhat *above* the ordinary rate, of previous corresponding seasons. Respecting the various counties of England, it may be likewise stated as interesting that, the mortality ranged under the average throughout Surrey, Sussex, and Hants; but in Berkshire it rose above the ordinary amount, especially in nearly all the districts of this county situated on the banks of the river Thames, where scarlatina prevailed. On the other hand, in several of the south-midland counties the total deaths ranged below the average: which result also occurred throughout all the south-western parts of England, excepting Wiltshire, but especially in the Amesbury sub-district, where the deaths exceeded the births, owing to the prevalence of typhus. In Herefordshire and Staffordshire, the mortality rose above, whilst in the other neighbouring counties the rate was below the average; notwithstanding smallpox proved fatal in Bristol, typhus and scarlatina in Weobly, fever and pulmonary complaints in Birmingham, and scarlatina in Staffordshire. Besides which, it appears the number of deaths exceeded the average in Stoke-upon-Trent, Newcastle-under-Lyne, and in Wolverhampton, as also the districts around. Throughout the counties of Derby, Leicester, and Nottingham, the mortality ranged

above, but in Lincolnshire it fell below the average; and further, the health of the inhabitants of Grantham, Leicester, Basford, and Derby was by no means good; while scarlatina proved fatal in Loughborough, and typhus prevailed in Nottingham. Cheshire and Lancashire exhibited a mortality above the ordinary rate, which arose chiefly in consequence of scarlatina having affected many districts, besides the appearance of typhus as an epidemic in some places; and although the deaths were fewer in Liverpool, they proved more numerous than usual in Manchester. Throughout Yorkshire the rate of mortality ranged about the average, notwithstanding scarlatina, typhus, and variola spread extensively in many parts of the county; as, for instance, at Scarborough, having a population of 24,615 residents, where 24 deaths were registered by smallpox, and 18 from scarlatina. On the other hand, it deserves mention that, the populous towns of Leeds and Sheffield exhibited a rate of mortality below the average. In the northern counties, however, the public health proved less satisfactory than usual, during the three months now under review: as scarlatina prevailed extensively, particularly at Newcastle-upon-Tyne and its neighbourhood, besides Durham, Carlisle, Cockermouth, and Whitehaven. In Wales the deaths were rather more numerous than ordinary, smallpox having proved prevalent and fatal, whilst epidemics occurred in several localities; as, for instance, at Wrexham, some parts of which, I may add, were reported to be in a filthy state. Cardiganshire and the other high districts of the Principality, seem, however, to have been healthy. Several additional features characterising the sanitary condition of England during the year adverted to in this Report might be described, but enough having been said to give readers a general yet correct notion of the subject discussed, I now proceed to make a few remarks respecting the great Metropolis, and the mortality that prevailed within its precincts, during the twelve months to which reference has been repeatedly made in previous pages, and then bring the present Report to a conclusion.

With the exception of 1850, the gross mortality recently met with, throughout the entire metropolis, has ranged under the amount officially reported during any of the previous six years, notwithstanding its augmented population. Thus, during 1847, the deaths in London were 60,442; in 1848 the mortality fell to 57,628; in 1849 (the cholera year) 68,432 persons died; in 1850 the number decreased to 48,579, or nearly one third less than in the former period; in 1851 the mortality again rose to 55,354; whilst, in the year just terminated, the fatal cases from all causes were 54,213, being a diminution of 1141 deaths, if contrasted with the twelve months immediately preceding, and thus showing that, irrespective of some peculiarities, they did not prove insalubrious to metropolitan residents. In reference to the different periods now enumerated, it likewise becomes interesting to state that, in each year some special feature appeared, by which an historian might even characterise one from another, simply by naming the particular disease then more than usually epidemic. Thus, 1847 is remarkable for influenza, since, by this malady, 1253 persons died in London, the former and subsequent mortality from that cause having been small, comparatively speaking. In 1848, scarlatina and

typhus prevailed extensively, 8325 persons having then sunk under the above two diseases. In 1849, cholera, as already stated, besides diarrhœa, raged like a pestilence, 17,588 human beings having fallen victims to these complaints, and chiefly during autumn. Contra-distinguished to this year, 1850 proved healthy, even typhus and consumption—those common scourges of the human race—having exhibited a diminished mortality. In 1851, measles and pertussis were more fatal than ordinary, as also bronchitis with pneumonia; whilst 1852, the year now more immediately under consideration, seems only distinguishable on account of the prevalence and mortality of scarlatina, 2549 individuals—chiefly young persons—having recently died from that complaint, which raged epidemically, although not so severely as during 1848, already reported in a previous paragraph.

Notwithstanding the salubrity of London, throughout the past year, was generally speaking satisfactory: nevertheless, several diseases besides scarlatina, adverted to in a former page, manifested an augmented mortality, when contrasted with 1851; the maladies which recently proved more fatal than in the previous period being hæmorrhage, whereby 233 persons died during 1852, instead of 180 in the first-named year; by cancer, 936 in place of 910; scrofula, 447 instead of 381; tabes mesenterica, 838 instead of 812; syphilis, 140 instead of 129; disease of the brain, 621 instead of 596; epilepsy, 370 instead of 325; disease of the heart, 1971 instead of 1955; enteritis, 394 instead of 363; hepatitis, 207 instead of 190; disease of the liver, 589 instead of 571; jaundice, 186 instead of 166; rheumatism, 247 instead of 213; carbuncle, 50 instead of 19; and phlegmon, 34 instead of 24. From the want of breast-milk, 267 infants perished instead of 252; through child-birth and puerperal fever, 450 women died, in place of 411. Intemperance caused death to 80 individuals, against 67; whilst 1756 human beings lost their lives through violence of various kinds, instead of 1642 the former year. Respecting this very large number of violent deaths reported throughout the metropolis, it is stated 252 died in consequence of burns and scalds, 312 by hanging and suffocation, whilst 353 were drowned,—all the above-named casualties having been more numerous than in the previous parallel period.

As might be expected after reading the preceding remarks, several maladies manifested recently a diminished mortality, in comparison with the amount of deaths reported in 1851, as the following summary demonstrates. For instance, measles proved fatal to 600 persons during last year against 1322 in the former; by pertussis 2161 deaths were reported instead of 2164; diarrhœa, 2164 instead of 2271; cholera, 162 instead of 213; influenza, 117 instead of 354; remittent fever, 91 instead of 122; typhus, 2164 instead of 2346; phthisis, 6935 instead of 7025; apoplexy, 1162 instead of 1250; paralysis, 1021 instead of 1063; pneumonia, 3271 instead of 3684; pleurisy, 154 instead of 189; asthma, 627 instead of 816; enteritis, 79 instead of 103; whilst wounds and fractures, although the aggregate deaths caused by violence recently exceeded the number met with in 1851, were reported to have proved fatal to only 712 indi-

viduals throughout London, against 761 recorded during the year immediately preceding.

Another feature characterising the recent mortality merits notice, and which appears somewhat remarkable, amongst so varied and numerous a population as that of London, is the singular uniformity exhibited by several diseases, in regard to the number of deaths. This peculiarity was observed in hydrocephalus, by which malady 1595 individuals died during 1852, contradistinguished to 1603 in the previous year; disease of the heart also caused 1971 deaths, instead of 1955; convulsions, 2029 instead of 2024; dropsy, 811 in place of 818; peritonitis, 213 instead of 217; disease of joints, 180 instead of 178; hernia, 144 instead of 142; delirium tremens, 123 instead of 130; insanity, 114 instead of 112; purpura and scurvy, 56 instead of 52; diabetes, 48 instead of 41; and by ague, 19 instead of 18; whilst the same number of females died by ovarian dropsy in both years, the instances being 46 respectively, which is, however, considerably under the mortality registered from the same cause either in 1849 or 1850, the deaths from that complaint having been 50 during the first-, and 60 in the last-named period.

Considered in reference to the aggregate metropolitan population, recently calculated to comprise 1,133,907 males and 1,286,712 females, or altogether 2,420,619 inhabitants, it appears the mortality of 1852 was 2·23 per cent., which is one death in every 44·$\frac{2}{3}$ individuals then living, when both sexes are included. On the other hand, if the deaths of males be only considered, the ratio reached 2·45 per cent., or one in every 40·$\frac{2}{3}$ residents; whereas amongst females the per centage ranged lower, being only 2·04, or one death in every 48·$\frac{4}{5}$ persons of that sex, and thence showing a difference of nearly one twelfth in favour of female life.

Although the facts now stated correctly illustrate the average mortality recorded throughout the entire metropolis, without any reference to locality: nevertheless, considerable discrepancy manifested itself in particular districts. Speaking generally in reference to this point, it appears that, throughout the various parishes situated south of the river Thames, the ratio of fatal cases from all causes amounted to 2$\frac{1}{3}$ per cent., or one death to every 38 persons then living. In the eastern parts of London, comprising Whitechapel, Shoreditch, Bethnal Green, and its neighbourhood, the amount of mortality was also equally high, although it fell somewhat lower in the City and central districts. Throughout the western portions of the metropolis, including Kensington, St. George, Hanover Square, and the other parts of Westminster, it ranged somewhat higher, being one death to every 44 inhabitants; whilst in the northern districts, comprising Marylebone, Hampstead, Islington, and vicinity, the average mortality reported during 1852 was a little beyond 2 per cent., or only one death to every 45 persons then living,—thereby proving that, the most salubrious residences were indubitably on the elevated parts of London north of the Thames: the difference betwixt these situations and the low regions of Southwark or Lambeth being very marked, according to the figures just quoted.

Before concluding the present report respecting the prominent

features which characterised the sanitary condition of England during 1852, it deserves record that the past year was peculiar on account of the dry weather which prevailed in spring, followed by a hot summer, an unusually moist autumn, and a very mild winter. These atmospheric conditions exercised, of course, considerable influence upon the public health, and will in some degree explain the results detailed in this communication. Like excessive cold, high temperature always proves inimical to the human constitution; and as a larger number of persons died last summer in London than usual, this may be partly accounted for by the hot weather which then prevailed, followed by great moisture, more rain having fallen, especially in autumn, than the average noticed for many years previously, nearly 34½ inches being registered at Greenwich during 1852, in place of 20·2 during 1851, and only 19·6 throughout the whole of 1850, which proved, as already recorded, very healthy. Respecting the high atmospheric temperature experienced during last summer in most parts of England, it is interesting to mention that the most elevated degrees of heat prevailed in the eastern and central districts of the country, the thermometer having risen to 93·5 at Holkham, in Norfolk; to 95 at Gainsborough, in Lincolnshire; to 93·5 at Wakefield; and to 95 at Leeds, which place also became remarkable, on account of its having shown the greatest daily ranges of temperature recently reported from any locality. The frequent prevalence of south-westerly winds, during the past year, likewise deserves notice; as also the unusual absence of electricity, both positive and negative, which was especially observed towards the end of autumn, and the beginning of winter. The above phenomena are all instructive in reference to the public health; and, as they seem materially connected with the subject discussed in the preceding pages, I have thought it might be useful to place such facts now upon record, in order that other inquirers, interested in similar questions, may be enabled to form their own conclusions, regarding the sanitary condition of England which distinguished the recent season.

2. *Dr. Polli on Transfusion of Blood.**—In this memoir Dr. Polli collects twenty-three cases in which the operation has been practised in the ordinary way, that is, with human blood. In five of these death happened, either because the operation was too late or because death was about to happen from some independent and inevitable cause; in all the rest life was saved—in many from the very jaws of death. In no one case did the operation give rise to any serious inconvenience. The majority of the cases were those of parturient females, reduced to death's door by flooding; the rest those of persons suffering from other kinds of hæmorrhage, induced upon the hæmorrhagic diathesis.

Dr. Polli also enumerates some cases in which the *blood of animals* was successfully substituted for that of man. Four of these are on the authority of M. Denis, who wrote his 'Lettres sur la Trans-

* Recherches et Experiences sur la Transfusion du Sang; par le Dr. Polli. Archiv Gén. de Méd., Oct. and Nov. 1852.

fusion' at Paris in 1667. Another is taken from an Italian work by Dr. Manfred, of Lucca ('De Nova et Inaudita Medico-Chir. Operatione,' &c., Romæ, 1668). Another by MM. Lower and King, from the 'Gaz. Médicale de Paris,' p. 65, 1848. The particulars of the two last experiments are not given, and we are only told that the blood of a lamb was employed in the one, and that of a calf in the other, and that the result was successful. The particulars of M. Denis' experiments are as follows:

*Exp.* 1. M. Denis took ten ounces of blood from the arm of a strong and healthy butcher, aged forty-five, and injected through the same opening twenty ounces of the arterial blood of a lamb, after which, the butcher without any alteration in his manners and feelings, proceeded to kill and dress the animal which had furnished the blood, and then went to the public-house to dispose of the gratuity which had been given him by the operator. The next day, according to his own account, he felt in better health than usual, and he underwent the same operation with the same results.

*Exp.* 2. Nine ounces of the arterial blood of a lamb were injected into the arm of a youth, aged sixteen, who had suffered during two months from fever, and who, from this cause and from having been bled twenty times, lay in a moribund state, when he immediately calmed and slept, and this rallying eventuated in complete recovery.

*Exp.* 3. A madman of eight years standing, whose madness showed itself in attacks of complete restlessness and wakefulness of eight or ten months duration, was treated by transfusion in the fourth month of such an attack. Ten ounces of blood were abstracted and six ounces of the arterial blood of a calf injected in their stead, with much relief to the symptoms. Afterwards a pound of the same blood was injected. The immediate result of the second transfusion was vomiting, purging, and sweating. These ended in sound sleep, which brought about a favorable crisis, for from this time the patient continued to improve until he was quite well.

*Exp.* 4. The patient in this experiment was lethargic, convulsed, and almost pulseless, in consequence of a violent and protracted attack of vomiting and purging. M. Denis injected eight ounces of blood (of what animal is not stated), when the convulsions ceased, the pulse rose, the consciousness returned, the bystanders were recognized and spoken to, and some food was taken. This state continued for twenty-four hours. The transfusion was then repeated, but the vomiting and purging returned, and the patient sunk eleven hours afterwards. Serious intussusception of the small intestine was found after death.

The conclusion to which Dr. Polli arrives is that the operation of transfusion is simple, efficacious, and safe. He recommends it, not only in cases of excessive hæmorrhage under ordinary circumstances, but in cases where there is a strong hæmorrhagic diathesis, as likely to produce a beneficial change in the crasis of the blood. He recommends it also in cases of extreme inanition, where there is not time to introduce food in the ordinary way, or strength to digest that food. He *suggests* it as a possible means of inducing a beneficial change in the constitution of the blood in chlorosis, rachitis, scrofula, and insanity; and he thinks that defibrinised aerated arterial blood might prove to be a powerful means of resuscitation in cases of asphyxia and other kinds of apparent death.

3. *M. Melsens and Dr. Parkes on the Treatment and Prevention of slow Mercurial and Saturnine Poisoning by Iodide of Potassium.**—1. According to M. Melsens, the iodide of potassium acts curatively by dissolving the fixed union existing between the metal and organic tissues, and by forming a soluble compound, which is speedily washed out from the body by virtue of its diuretic properties; and *not* by fixing the lead or mercury still more firmly in the system, as is done, or is supposed to be done, by the remedies at present in vogue in such cases. The evidence upon which these views are based is not as yet as full as could be desired, but it is sufficiently full to demand the most serious attention, and this all the more as Dr. Wm. Budd has witnessed analogous facts in his own experience—facts which in some degree had led him to anticipate M. Melsens' theory.

In the course of his investigations, M. Melsens found that iodide of potassium could be taken in large doses without any ill effects. He himself took for two months a daily dose, varying from ʒss to ʒiss, without pain or disorder of any kind. For a few days he had coryza, and afterwards some pimples on his skin and a peculiar taste in his mouth, without any metallic after-taste, but all the while his appetite continued improving. In his own case, and in others, the salt was found to pass rapidly and almost exclusively through the kidneys; and the most rigid examination could scarcely detect a single trace in the stools, not even when purgatives were given cotemporaneously. The primary effect of the iodide of potassium in cases of mercurial or lead poisoning was to aggravate all the symptoms, by setting free, as it seemed, the metal united with the tissues, and by forming with that metal an active compound—a compound for the time more active than the former compound, but intrinsically of less consequence, from the rapidity with which it was thrown out of the system. This aggravation of symptoms M. Melsens regards as a sure token of cure, and as proving that the remedy is acting, though as showing at the same time the great necessity of so administering the remedy that this aggravation should not be beyond bounds.

Iodide of potassium, it appears from these investigations, has the power of dissolving mercury and lead and some of their compounds, and the presence of organic matters does not prevent these changes, but the power is very much more limited in respect of lead. It dissolves, however, metallic mercury, and all the mercurial compounds which can possibly occur in the living body.

It is suggested, also, that other alkaline, earthy, or metallic iodides, or even bromides or chlorides, might answer the same purpose as the iodide of potassium. In this way it is supposed that common salt may have acted as a valuable prophylactic in persons who were in the habit of taking much salt in their food, for in several instances these persons seemed to be less prone to mercurial and saturnine affections than those who took little salt.

M. Melsens also objects to the use of sulphuric acid or sulphates in

* Medico-Chirurgical Review for Jan. and April, 1853. M. Melsens' memoir is translated by Dr. William Budd, of Bristol, from the original in the 'Annales de Chemie et de Physique.'

the treatment of slow poisoning by lead, on the ground that sulphate of lead, as exemplified in dogs, is itself a poison. He thinks that this acid and its salts ought only to be given in cases of sudden poisoning with a soluble salt of lead, with the object of converting that salt into an insoluble compound, and so preventing absorption.

Many experiments upon the lower animals were employed in the establishment of these conclusions.

The clinical facts upon which these views rest are the following:

*In lead poisoning.*—1. M. Boucher, house-painter. Saturnine pains in the spine. (Rachialgie.) Incomplete paralysis of the arm. Lead colic. Treated without success at the Charité, under two different physicians; also, at the Hôpital Cochin.

From the 10th December to the 13th March, 1844, he took 3087 grains (200 grammes) of iodide of potassium. At the last-named date he was perfectly cured.

This patient was treated at his own house. As soon as he could take nourishment he was allowed to follow his usual mode of living. He had at his command a graduated solution of iodide of potassium. He began with a small dose; he stopped now and then for some days, increasing or diminishing his dose according to his pains and sensations. On the 27th of May he had already gone to work, and continued well in spite of the weakness of his forearms. Frictions, with an ointment containing iodide of potassium and a little carbonate of soda, were now ordered. He derived benefit from them, and if the paralysis did not entirely disappear, he at least recovered strength in his hands.

At the moment when the metallic compounds fixed in the body become dissolved or transformed, phenomena of acute poisoning may occur, caused by their liberation. These phenomena were, at the outset, so intense in the case of Boucher, that the treatment might have been supposed to be hurtful rather than beneficial. But the occurrence of these phenomena affords incontestable proof of the energy of the treatment: the dose of iodide which excited them was only 46 grains (three grammes) a day.

At the commencement of his treatment the patient's urine was a deep brown, and had been so for some time; but after the first few days this colour disappeared, and the urine acquired the tint of common urine. I have made the same observation in other cases.

2. A typefounder complained of *tormina*, and of weakness of the legs. 2778 grains of iodide of potassium entirely restored him.

3. A workman, of forty or fifty years of age, who had worked in a white lead manufactory, and also in an establishment for making visiting cards, had been in hospital more than six weeks. When first subjected to the iodide of potassium treatment he was weak and quite broken up.

It is almost impossible to form an idea of the rapidity of the amendment which ensued in this man. He grew better, so to speak, as you stood by. At the end of three weeks he left the hospital completely cured. The dose of the iodide had been raised pretty rapidly: when he left the hospital he was taking 77 grains (5 grammes) a day.

4. A man about fifty years old had been subjected to different modes of treatment, without benefit. When he began his treatment he could scarcely hold himself up; all his limbs were more or less palsied; he was pale and emaciated. After five or six weeks' treatment he was perfectly well, and left the hospital at his own request. When his treatment began his urine was of a deep brown; a fortnight afterwards it had the colour of common urine.

*In mercurial poisoning.*—1. The first patient subjected to the treatment was an old man at Bicêtre, whose case has been recorded with full details by M. Guillot. He had been a gilder, and had lost the use of his limbs by the exercise of his calling. His sight was gone, and he was, moreover, tormented by violent and constant pains. Iodide of potassium was administered every day, in the dose of 61 grains (four grammes). At the end of a fortnight's treatment he left the infirmary alone and without help, whereas on his admission he was obliged to be brought in a litter.

2. I saw a gilder in mercury, about twenty-five years old, treated by the iodide of potassium during three weeks. At the end of that time he could write with ease, whereas at the beginning it was perfectly impossible for him to write at all.

3. The only person on whom the iodide of potassium did not act with energy was an old man of seventy, a working gilder. He was only treated during a few days for a strong salivation; the treatment was given up.

4. Barthelemy Pichon was a working gilder. His memory was very feeble; his speech much embarrassed; and the tremors were so violent, that he could only be employed in the coarser operations of water or galvanic gilding. He belonged to the factory of M. Christofle.

In the beginning of 1844 he was six weeks at the Hôtel Dieu, but with small result. The 1st of June, 1844, I let him have 3087 grains (200 grammes) of iodide of potassium in solution, recommending him to begin by taking a portion corresponding to 15 grains (one gramme) of the salt daily, increasing the quantity as he liked; guiding himself by the severity of his pains, and diminishing the dose when these pains should become too severe. After a few days' treatment he was seized with pains in the head and stomach, and had pimples over the body,—symptoms which did not, however, prevent him from working constantly during the seventy days that his treatment lasted, and that were taken up in consuming the 3087 grains (200 grammes) of iodide of potassium. He followed his ordinary regimen, and changed his habits in nothing.

After the treatment, Pichon was completely cured. He wrote without shaking; he spoke glibly. According to the report of M. l'Eté, this workman, who before his treatment was unable to execute any but the coarsest works belonging to gilding on metal, after seventy days' treatment executed the most delicate processes. There was intense headache on one occasion during his treatment, but this was in sequel to a debauch, after which he had taken no medicine for three or four days. In order to recover the lost time, he took at one draught a dose which should have been distributed over several days. Immediately after this dose the pain of the head was so agonizing, that he thought he should have gone mad.

5. A looking-glass maker, employed in one of the Brussels manufactories, put himself under treatment by iodide of potassium. Before he became a gilder he had been a typographer. He trembled to such a degree as often to drop everything he held in his hand; his speech was slightly embarrassed; his legs supported him ill; he often made false steps; his strength failed him almost entirely. Three hundred and eight grains (20 grammes) of iodide of potassium, taken in ten days, scarcely affected him. As he belonged to a provident society of operative typographers, the medical attendant of the society desired, before continuing the iodide of potassium, to subject him to other treatment. He was of opinion that trembling of another character might complicate the mercurial trembling. A month afterwards he sent the patient back to me in exactly the same state as before. He was again placed under treatment by the iodide. Although this artizan had left his trade, the

amendment following the treatment was very slow. He told me, nevertheless, that he felt his strength return daily; the tremors gradually disappeared. It was not, however, until he had taken 3087 grains (200 grammes) of iodide that the amendment was very marked. He scarcely trembled at all, his step was firm, his handwriting good; but his strength had not entirely returned. Observing that the cure in this patient was progressive, but slow, in spite of his withdrawal from his workshop, I ordered iodide of potassium to be used in frictions, under the form of iodide ointment. It was especially from this time that the recovery of strength became perceptible. It was not until towards the end of August, after three months' treatment, that he had entirely recovered.

I saw this workman again in the beginning of the month of November. He told me that his health and strength were much as they had been before he began the business of a looking-glass maker. In the month of April, 1849, he was perfectly well, and nothing remained of his old complaint.

This man only remained proof against the pernicious influence of the trade twenty-one months. Having entered the manufactory in March, 1846 the trembling came on in January, 1848. In questioning him in the presence of many of his comrades I made this observation, which appears to me important:—Those workmen who are fond of salt resist the contamination longer than those who are not.

6. An operative in the same factory was affected with a trembling, which embarrassed him much in his work. His limbs were exceedingly weak; the slightest effort fatigued him. Sometimes objects dropped from his hands: his gait was insecure. His tremors were already of old standing: a year before, he was ill enough to keep his bed, and although relieved then, he remained weak after the treatment which was adopted.

From the 21st of March, 1848, to the 7th of May, he took 771 grains (50 grammes) of iodide of potassium. During the whole of this time he continued to work at silvering, as before, and, what is more important, his work in contact with mercury had almost doubled in the number of hours. Nevertheless, on the 7th of May the tremors were almost reduced to nothing. He took afterwards, up to the 22d of June, about 1543 grains (100 grammes) of iodide of potassium. He often interrupted the use of the salt for a few days, taking it according to his own judgment, the severity of his pains being his guide. The 4th of September he was perfectly well; trembled little or not at all, and continued his calling without any recourse to medicine. During the whole of this time he never ceased to work, and was always in contact with the poison. His cure was accomplished without preventing him from gaining his livelihood and maintaining his family, and without any change in his regimen or habits.

Nothing is more curious than to examine a portfolio in which the patient wrote to me every day a few words.

* * * * * *

At the beginning of the treatment, the urine of this patient exhibited twice a somewhat uncommon phenomenon. It was limpid, of a bright yellow, but alkaline to such a degree as to effervesce with acids. After a fortnight's treatment, this phenomenon did not recur.

I examined, on eight occasions, four pints of the urine of this patient, in order to see if, under the influence of the treatment by iodide of potassium, the mercury would be found again in his urine. The first specimen contained mercury in perfectly recognisable quantity; the second also contained mercury, but sensibly less.

In following the process employed for the first two specimens, I found no

mercury in the third. The fourth specimen, examined by another process, gave scarcely an appreciable trace; but on distilling, in a tube drawn out into a point, one of the slips of gold which terminated the pile I had used, I obtained a small yellow sublimate, which on the morrow had become red. In dispersing this by the flame of a spirit lamp, it became again sublimed with a yellow colour, passing afterwards into red. This is one of the characteristic properties of iodide of mercury.

Is it not remarkable to see a man under the influence of slow poisoning by metallic mercury, void, under the influence of iodide of potassium, iodide of mercury in his urine?

The patient now and then interrupted his treatment. I examined the urine a fifth time during one of these interruptions. I failed to discover mercury in it, but at this time the patient might be considered as cured.

I examined three other specimens of urine, collected when he was taking the strongest doses of iodide of potassium; but whether it was that the urine contained none, or contained it in quantity too small to be detected by the means employed, I could no longer detect any mercury. However that may be, this operative, who continued to work in quicksilver, and who, since the end of June, had taken no more medicine, continued perfectly well. At the beginning of the month of November, all his functions were performed well; his strength and vigour had returned. The organs of generation, previously for a long time passive, had recovered their former energy after some weeks' treatment, and had maintained it since.

This cure proves in the clearest manner, that when mercury is only absorbed in small daily portions, as is the case with those who work at the cold silvering process, iodide of potassium not only possesses the property of curing the patient, but acts also as a powerful prophylactic.

All these investigations bear very intimately upon the use of iodide of potassium in those cases of syphilis in which mercury has been given for a long time. They point out the dangers of giving the iodide in too large a dose, for this practice, as before explained, might excite a serious and perhaps fatal aggravation of the symptoms. They explain also the meaning and cause of that profuse ptyalism which occasionally follows the use of the iodide in cases where the system is saturated with mercury.

2. Dr. Parkes supplies the gap in the foregoing evidence by an actual case in which the iodide of potassium caused, or seemed to cause, the elimination of lead in the urine. This case is as follows:

A painter, aged 38, was admitted into University College Hospital, in February, 1853; he had suffered for more than two years with paralysis of the extensors, and, in a less degree, of the flexors, of both fore-arms; there was a well-marked blue line along the edge of the gums. He had been incapable of work for eighteen months, and had therefore not been exposed for a long time to any fresh source of poisoning. He has been treated for two months very carefully, but ineffectually, in the Middlesex Hospital, and among other means, by "sulphur baths."

Professor Williamson was so good as to undertake the examination of the urine for lead, in the Birkbeck Laboratory of University College. He was furnished with four specimens: 1st. The urine of February 2d to 3d, no medicine having been given. 2d. The urine of February 3d to 4th, no medicine having been given. 3d. The urine of Feburary 4th to 7th, 70 grains

of iodide of potassium having been taken. 4th. The urine of February 7th to 10th, 90 additional grains of iodide of potassium having been taken.

Lead was not detected in the first two specimens of urine, but it was found in the urine passed after the employment of the iodide of potassium.

4. *Dr. Gull on Electricity as a Remedial Agent.**—In the last number of the 'Guy's Hospital Reports,' Dr. Gull narrates a long series of cases of paralysis, paralysis agitans, chorea, mercurial trembling, permanent spasm, amenorrhœa, &c., for the purpose of showing the advantages to be derived, in many such cases, from the remedial employment of electricity.

With regard to the manner of employing the electricity, Dr. Gull writes:—"I have not seen any unequivocal therapeutic effects from the agency of continuous and uniform currents, if we except the counter-irritation produced in the skin by the electrolysis of the saline ingredients at the points where the poles of the battery are placed. I have tried such currents both direct and inverse, in several cases of tic douloureux, and other forms of neuralgia, but without benefit beyond what I think would have followed from the same amount of irritation on the skin produced by any other cause. Neither has it appeared to me that any practical advantages have resulted from employing shocks from the direct current in paralysis. Where our object is to produce a general and diffused stimulation, electricity of high tension (from the electrical machine) is most appropriate, as in chorea, lead palsy, paralysis from cold, hysteria, &c.; but where the stimulation of muscle is principally aimed at, we can best effect this by a rapidly interrupted current of galvanism, obtained by the various pieces of apparatus invented for that purpose, the simplest of which are the electro-magnetic or magneto-electric coils." (p. 83.) With regard to the precautions required in the use of electricity, Dr. Gull remarks that symptoms of actual irritation in the nervous centres are contraindicatory, but not so those peculiar aching pains in the limbs and between the shoulders which are usually complained of, particularly in lead-palsy. In the case of children, also, Dr. Gull remarks that a great deal of alarm may be obviated by letting the nurse sit on the insulating stool with the infant in her arms, and by drawing the sparks through the flannel dress rather than from the naked surface of the patient. This precaution is of great value by enabling us to employ an agent which is, perhaps, of greater value than any other in stimulating the paralysed muscles, and in so preventing that process of rapid wasting which readily occurs at this time of life, and which, if it does occur, lays the foundation of permanent deformity.

The cases narrated by Dr. Gull are sixty in number, and of these the subjoined few must serve as examples.

*Case* 1. *Paraplegia from Cold.*—Feb. 14, 1850.—M. O—, æt. 37, a married woman, occupied only in domestic employments; states, that fourteen weeks ago she was (when recovering from choleraic diarrhœa) exposed to damp and cold during menstruation. In the night she felt a numbness come over her legs,

* A Further Report on the Value of Electricity as a Remedial Agent, by Dr. Gull; Guy's Hospital Reports, vol. viii, part 2, 1852.

and in the morning had scarcely any sensation from the crista ilii downwards, neither could she put one leg before the other without help.

Ordered galvanic shocks from the electro-magnetic apparatus through the legs on alternate days for about twenty minutes.

March 7th.—She has attended regularly and improved astonishingly.

After a few days from the date of this report, she left off attending, being able to walk with facility, and returned to the duties of her family.

*Case 7. Facial Paralysis from a Coup de Vent.*—W. T—, æt. 27, a gentleman of rather weak constitution, was in his usual health until three days before I was called to see him. He was then under some alarm on account of paralysis of the right side of the face. Although he took no notice of the circumstance at the time, he informed me, on inquiry, that three evenings before he had stood talking with some friends for a few minutes at the door, whilst the cold air was blowing upon him. The following morning he had pain in the ear, with a feeling of stiffness in the cheek, and the next day it was completely fallen; his health was as usual, and he had no other nervous symptoms. As there was pain about the exit of the seventh nerve, Dr. Lodge, of Peckham, who called me to see the case, applied two leeches and a blister, with other appropriate treatment. It only remained for me, therefore, to advise electricity to the cheek. This was first employed on the 20th of October, and it was not before the middle of December that marked signs of improvement followed. On the 31st of January, the following report was taken in the Ward Book:

"The angle of the mouth can now be moved with tolerable freedom. The branches of the orbital nerve are still completely paralysed."

The electricity was persevered with, and about the beginning of April, our patient was in some dismay, thinking, as he said, that the electricity was doing too much, since the face, instead of being drawn over to the right side, as it had been, had now began gradually to be drawn too much to the left.

The cause of this was obvious. The zygomatic and levator anguli muscles of the paralysed side had recovered more rapidly than their antagonist the orbicularis oris; and hence the face was on this side now too much drawn up.

By directing the stimulus of the electricity to the paralysed half of the orbicularis, its power slowly increased, and the deformity lessened, although traces of the want of balance are still obvious when the patient laughs. In other respects the recovery has been nearly complete, the treatment having been persevered with (with some intermission) for six months.

*Case 25. Extreme Wasting of the Muscles of the Upper Extremities from Lead.*—G. H—, æt. 35, a cachectic looking man, of thin, spare frame, by trade a painter, has had colic three times: the first sixteen months, the second eleven months, and the third four months ago. For the last nine months his health has been failing him, and his arms have been gradually wasting and becoming useless. He has had great pain between the shoulders, in the knees, and ankles. Occasional darting pains in the head. There is now very remarkable wasting of the muscles of the whole of both upper extremities, but especially of the fore-arms and hands, the muscles of the thumb and the interossei. The nutrition of the body generally is very defective, The legs are weak, but not obviously paralytic. Gums spongy, with a well-marked blue line.

The following were the measurements of the arms when he began to use electricity.

Jan. 6th, 1850.

Circumference of right forearm at largest part, $8\frac{4}{10}$ inches.

" left " " $8\frac{8}{10}$ "

Ordered sparks to be drawn from the spine and down the arms.

27th.—Much improved. The measurements made as above are,—

Right forearm $9\frac{1}{10}$ inches—increased $\frac{7}{10}$ inches.
Left ,, $9\frac{1}{6}$ ,, ,, $\frac{4}{10}$ ,, (nearly.)

Feb. 7th.—The arms were again carefully measured, and the results were,—

Right forearm $9\frac{4}{10}$ inches—increased 1 inch.
Left ,, $9\frac{6}{10}$ ,, ,, $\frac{8}{10}$ ,,

This improvement continued, and he was presented cured at the beginning of March, having attended three months.

*Case* 26. *Paralysis of Right Arm during early Dentition.* October 1st, 1851.—A. E—, æt. 12 months, a delicate child, with light hair and blue eyes; was in good health six weeks ago, and had then cut four incisors in the upper jaw and two in the lower. For a week preceding the present attack, had been feverish, and ailing with diarrhœa: but went to bed without anything specially observable in his symptoms. During the early part of the night he was restless, and the next morning his mother observed, on washing him, that he was unable to raise the right arm, which fell loosely by his side, the muscles of the shoulder being quite relaxed. The paralysis has continued and the muscles have wasted; he is able to move the fingers, though not in any degree to raise the arm. There is no sign of irritation about the gums.

Ordered sparks of electricity to be taken from the shoulder and down the arm.

Jan. 29th.—Much improved: can raise his hand to his mouth.

Feb. 12th.—Still further improvement; can move the arm and hand in any direction. There remains slight feebleness in the action of the flexor muscles of the fore-arm.

5. *M. Herpin on the Treatment of Epilepsy.**—"The remedies which were employed by M. Herpin, in 55 cases which underwent full and prolonged treatment, were as follows: the oxide of zinc; the ammoniacal sulphate of copper; valerian and the valerianate of zinc; an umbelliferous plant, the selinum palustre; the artemisia vulgaris; the powder of the mole-cricket; ammoniacum, and horse-radish. Of these remedies, the salt of zinc, the ammoniacal sulphate of copper, and the selinum palustre and valerian were found to have the best effects. The following is a summary of the results of each remedy:

The *oxyde of zinc* was employed in 44 cases, and of these there were—

| | | Cured. | Incurable. |
|---|---|---|---|
| Cases which had had under 100 fits | 31 | 26 | 5 |
| ,, ,, 500 fits | 5 | 2 | 3 |
| ,, more than 500 fits | 6 | 0 | 6 |

The remedy was commenced in quantities of from 6 to 8 grains daily, given in divided doses one hour after each meal. It was augmented every week by two grains daily, until a dose of 45 grains was reached. It was then administered in the same dose for three months longer. It was given, of course in proportionate doses (one grain per diem), to children under one year, and was gradually proportionately increased. At first it sometimes produces nausea and

* An Extract from a Review of Dr. Herpin's 'Du Prognostic et du Traitement Curatif de l'Epilepsie,' by Dr. Parkes; Medico-Chirurgical Review, April, 1853.

malaise, but these symptoms soon pass off. With regard to the time when the remedy may be supposed to have had a fair trial, the following rules are laid down :—In children under one year, a total quantity of 75 grains should be administered before the remedy is given up. In cases over two years, and in which the prognosis is only moderately favorable (cases of more than 100 attacks), as much as 4 ounces must have been given during the whole period of treatment, before another remedy is had recourse to. After the cessation of the fits the remedy must not be discontinued, as a relapse may occur. As much zinc should be given *after* the cure as has sufficed to make the cure, in order to guard against a return.

The *ammoniacal sulphate of copper* was used in 12 cases.

| | | Cured. | Incurable. |
|---|---|---|---|
| Cases in which the prognosis was favorable (under 100 fits) | 6 | 4 | 2 |
| ,, Less favorable | 1 | 0 | 1 |
| ,, Unfavorable | 5 | 0 | 5 |

The dose of copper is, to children of five years of age, one tenth of a grain daily, in divided doses, augmented gradually to one fourth of a grain daily. In older persons, proportionally large doses must be given. The physiological effects of the copper are gastralgia, anorexia, nausea, borborygmi, and diarrhœa. It must be continued for some time ; and for an adult at least 75 grains should be altogether taken before it is given up.

We need not occupy space with a detail of the result of the valerian and selinum palustre ; both were successful in some cases ; and, considering the small number of cases in which the latter was employed, the proportion of cures was larger even than those following the use of zinc."

6. *Dr. Radcliffe on the Pathology of Affections allied to Epilepsy.** —In a former paper (see vol. XVI, p. 312,) I endeavoured to show that epilepsy depended upon a decided and unequivocal deficiency in the due amount of that stimulus which is supplied to the muscles from the blood, nerves, and other sources, and not upon an increased afflux of such stimulus. In the present paper I propose to extend the inquiry, and demonstrate that other muscular disorders depend upon the same want.

In order to do this, I shall endeavour to prepare the way by some preliminary considerations respecting the temperament and pre-disposition of such of these disorders as are of a chronic character.

I. All muscular disorders admit of being divided into three categories—the tremulous, the convulsive, and the spasmodic ; and this division forms the groundwork of subsequent remarks.

1. In ordinary tremulousness, the temperament or predisposition is obviously distinguished by delicacy ; it is the feminine, in contradistinction to the masculine habit of body. In palsy, the shaking goes hand in hand with unequivocal marks of decrepitude and decay—the listless wish, the snowy

* The Pathology of Affections Allied to Epilepsy, by Dr. Radcliffe ; Lancet, March 19 April 16, and 23.

head, the fireless countenance, the wasted limb, the feeble pulse. In chorea, and in very bad tremulousness, the general condition is very similar. This affection is almost peculiar to females, and to females whose parents were infirm or aged, or who themselves had become enfeebled by improper or injudicious habits. It often originates during some severe and exhausting disease, or in the period of convalescence, and is always attended by signs of debility. In old cases these signs are very decided: the muscles are soft and pale, so as to bear some resemblance to the muscles of white-fleshed animals; they are also easily tired and tardily repaired. The face, lips, and tongue are pale; and not unfrequently the atony of the circulation is further indicated by pastiness of the skin, effusion in the serous cavities, rheumatic deposits, and other indications of a watery and depraved blood. In mercurial trembling the general state is intimately akin to that of general palsy or aggravated chorea; and in bad cases every faculty of the body and mind is completely shattered. In ague, the general strength is much impaired, and this impairment is in proportion to the severity and frequency of the paroxysms.

2. The hysteric convulsion is connected by its name with women, and by facts with women who are more than usually delicate, or with men who are in the same predicament. The convulsion of teething is equally connected with delicacy, for it is certainly true that this symptom manifests itself in weakly rather than in strong children, and in weakly children almost in proportion to their weakliness.

3. The state of system in chronic spasmodic affections is virtually the same. The liability to cramp is always associated with tremulousness. It increases with the advances of age, and is almost permanent, when nervous tremors become perpetuated into palsied tremors. The cramps of lead-poisoning are connected with a remarkable degree of wasting and atrophy, particularly in the muscles. The subjects of catalepsy, in like manner, are much more delicate and impressible than they ought to be. Their skin is usually pale or dingy, their pulse readily disturbed, their general appearance either hysterical or apathetic. A cataleptic boy, lately under my care, (the particulars of whose case were reported in 'The Lancet' at the time,) was as irritable, uncertain, and fretful as an infant. His apprehension was slow, his memory weak, his head large, his eyes staring, his pupils dilated and sluggish, his complexion sallow and venous, his hand cold and clammy, his pulse slow and feeble.

As with epilepsy, therefore, so with these forms of chronic muscular derangement, the conclusion is, that the disorder is manifested in a state of general weakness and atony, and not in one of health and vigour.

II.—In order to arrive at the knowledge of the real nature of the several affections allied to epilepsy, we now proceed to examine the condition of the vascular, nervous, and muscular systems in, and the nature of the causes operating upon, these affections.

1. What, then, is the condition of the *vascular system?*

1. In ordinary tremulousness, in palsied shaking, in mercurial tremor, and in choraic agitation, the circulatory powers are always depressed. A flushed face and a bounding pulse are never present. So also with the tremulous movements before and after fever. Rigor is coincident with a sense of coldness, a feeble pulse, a sunken countenance, a corrugated skin; subsultus, with a circulation faltering on the very verge of stagnation. Nor is this coincidence accidental. It is not—because the rigors disappear as the system rallies, and cease when the pulse and heat return. It is not—because they reappear in the form of subsultus when the feverish turmoil is past, and death at hand.

2. In convulsion the real state of the circulation is more masked than in tremulousness. It is so in hysteric convulsion. In an immense number of these cases the circulation is in a state of syncope, or virtually so; but is this the rule? Is the pulse never excited? So far as we know—never. Fluttering there may be, and often is, and this fluttering may be confounded with excitement, and called by the same name, but there is never true excitement. Convulsion and collapse, and not convulsion and fever go together; but we leave this question in abeyance for the present.

The state of the circulation in the convulsion of hydrophobia, may be well illustrated by three or four recent cases, which are taken without selection merely because they are the latest on record. One of these happened about twelve months ago, and was reported to the Newcastle and Gateshead Pathological Society by Mr. Heath. The patient was a carpenter, and the symptoms those of the ordinary disease. The pulse during the convulsion was quick and concentrated. The meaning attached to this last term, however, is not explained; but that it was not either full or hard is to be inferred from the fact, that the countenance at the time was anxious and drenched in perspiration, and the hands tremulous and cold. Another case fell under the notice of Dr. Sandwith, of Beverley, and is reported by him in the 'Provincial, Medical, and Surgical Journal.' The patient was a tanner, in his 43d year. He had been bled freely before Dr. Sandwith saw him, and, in addition to this, had lost a large quantity of blood, in consequence of the bandage having slipped from the opening in the vein. He was in a state of extreme debility, his face pale, his skin drenched in cold and clammy moisture, his pupils completely dilated, his breathing hurried, his pulse 120, thready, and vermicular, his spasms violent and constant. The absence of fever and any increase of animal heat is particularly mentioned, and insisted upon as a fact common to hysteria, mania, and tetanus, and some quotations from Drs. Beddoes and Currie are adduced in corroboration of this point. A third case occurred under the eye of my brother, at Hunslet, near Leeds; and the patient here is described as an "ill-fed, over-worked, lank, pallid boy, residing in a miserable hovel, in a neighbourhood the unhealthy character of which was indicated at the time by numerous cases of carbuncle, phagedænic ulcer, and typhus." He had no perceptible pulse at the wrist during the height of the malady, his skin was cool and damp, his respiration panting and irregular, his countenance anxious and livid. The last case we shall mention is reported at considerable length in the 'Edinburgh Monthly Journal of Medical Science, for August, 1852, by Dr. Lawrie, of Glasgow. In this case "the pulse was 150, regular, but not strong," but evidently stronger than in the three former cases. There was, however, far less convulsive disturbance than in them, and the symptoms are said to have been more like those of acute hysteria than anything else. "The globus and incessant tossing," says Dr. Lawrie, "were well marked; but although the desire to move was irresistible, the movements had no appearance of being involuntary or associated with insensibility." The fuller state of the pulse, therefore, in no way disagrees with the previous evidence, but rather tends to confirm it.

There is no particular evidence upon the state of the circulation in the convulsion of tarantism; but a pretty correct inference may be drawn from the fact, that this affection had many points of correspondence with hysteria or choraic convulsion, as well as from the strong presumption that many so-called cases of tarantism were in reality cases of hysteria or chorea.

The condition of the vascular system in the convulsions of fevers or inflammations is in no way obscure. These convulsions appear in the initial cold stage, or in that of final prostration, and never during the height of the dis-

order. They appear only when that cold stage is unusually severe, as in cases of malignant smallpox or puerperal fever, or when that final prostration is rapidly deepening into actual dissolution. They disappear with unfailing regularity whenever the system rallies, whether this be in the ordinary course after the incipient collapse, or in returning health after the fever. It is so also with the convulsions of the fevers or febrile affections of childhood. They take the place of rigor or of subsultus, and invariably avoid the hot stage. So again in the inflammations of childhood, they occur before and after, but never during the hot stage. In inflammation of the brain, for example, the malady frequently commences in convulsions; after this the system rallies, inflammation is developed, oppression follows, then prostration, and, when this is deep enough, convulsions return to close the scene. In the inflammatory irritation of teething, the little patient is in a state of hectic exhaustion—now cold, now hot—the skin dusky, and the pulse scarcely perceptible, when the convulsion happens. The great source of error in all these cases is the double-meaning of the words fever and inflammation, each of which includes two diametrically opposite conditions of the vascular system—collapse and excitement. It is this double-meaning which has contributed more than anything else to confuse the true knowledge of muscular pathology; for if, discarding these words, care had been taken to note whether the phenomena in question were coincident with collapse or excitement, we should long ago have been rid of much obscurity and perplexity in these matters.

The state of the circulation in the convulsions of death, and particularly of death by hæmorrhage, is manifestly one of the lowest conceivable depression. The blood escapes from the vessels until they are well-nigh empty, or the vital heat is chilled by commencing death; these are the changes which have come over the circulation under these circumstances.

In the great majority of instances, therefore, convulsion is coincident with, and dependent upon, the very reverse of vascular activity; and, this being the case, we must claim the benefit of the doubt in any individual case in which doubt may exist, as in some forms of hysteric convulsion.

3. The state of the circulation in spasmodic disorders is more easily understood than it is in convulsion. The pulse is particularly feeble in cramp. Thus, in a child at present under my care, whose feet and hands have been liable to cramp on exposure to cold, the cramped parts are perfectly cold and white, and the most careful examination cannot detect any pulse at the wrist or ankle; and, after the cramp has passed off, the pulse is most miserable, and not to be detected without difficulty. The pulse also is often imperceptible in the cramps of cholera, and always extremely feeble. It is as in the rigors of fever, with which these spasms are analogous; only in this case coolness has become coldness and clamminess, the wrists are pulseless, and paleness has deadened into sallowness and blueness.

In catalepsy the appearances are so death-like as to suggest the idea that the blood is stagnant. Dr. Watson says, the patient, in such case, "looks like a waxen figure, or an inanimate statue, or a frozen corpse," and this was certainly so in the case to which I have already referred, as falling under my own care, for here the catalepsed parts were cold, pale, and pulseless, or nearly so.

The state of the circulation, in tetanus, may be illustrated by two recent cases, which cases are not the less fitted for our purpose because they were reported with a different end in view. One of these was sent to 'The Lancet' by Mr. Salter, of Dorset. It was that of an old man, upwards of seventy-three years of age, whose foot had been partially destroyed in a threshing-machine. The spasms set in after a prolonged employment (for three or four

days) of strong purgative mixtures of salts, senna, and tartar-emetic, along with morphia and aperient pills. During the spasms, the injured foot was pale and numb, the skin moist, the countenance cadaverous. The state of the pulse is not specified; but what this was is to be inferred from the foregoing particulars, as well as from the adoption of vigorous stimulation, with brandy and ammonia when the spasms occurred. Indeed, in a man so old, so injured, and so antimonialized and purged, only one conclusion is possible, —namely, that the circulation must have been very greatly depressed. This appears, also, from the sequel, which was this: under the new mode of treatment the system rallied, and the tetanized parts relaxed; and this rallying and relaxation lasted for several days, at the end of which time the symptoms relapsed. This was after an exhausting and agitating interview with some friends. Again stimulants were had recourse to, and again the spasms disappeared, not to return. In the relapse, the pulse is stated to have been extremely feeble, and of a typhoid character. The second case is by Mr. Sanget, of Alfreston, in Sussex. In this patient, the state of the system is stated to have been such as to contraindicate the use of any lowering measures, the spirits being faint and low, the countenance anxious, the pulse 98 and weak, and so on. Quinine, ammonia, and turpentine were had recourse to; and the result of the treatment was, that the system rallied, and the spasms subsided. These instances illustrate the large body of cases of tetanus, for certainly the majority are in no way complicated with any kind or degree of vascular activity; but do they illustrate the rule? Are there no exceptions, in which there are plethoric or other active symptoms? The answer, as it seems to us, is clearly in the negative. It is stated by all authorities, and must be evident to all who have had any experience in the disease, that there is *no fever* in tetanus; and this, of itself, is almost sufficient to prove our position; for so anxious have medical men been to find some fever in maladies of this class, that to admit its absence is almost equivalent to admitting the opposite. Undoubtedly the vascular state in tetanus assumes many aspects, and some of these are such as to deceive an unpractised eye or an impatient finger, There can be no mistake in cases such as have been described, but there may very readily be in irritable subjects. In such persons, owing to the excitement of the examination, or some unusually severe pang at the moment, the pulse, when first felt, may beat with considerable force and fulness, and so give rise to an impression of fever or plethora; but this rapidly passes off, and the colour fades, and the pulse flags and falters. The pulse, indeed, is eminently changeable, and any excitement which may be manifested in it is quite momentary, in comparison with the almost constant state of depression. It must also be borne in mind, as confirming the same view, that in fatal cases the spasms of tetanus continue, and often increase, in spite of the progressive failure of the circulatory powers—a fact which is only explicable on the supposition that the spasms are dependent upon the very reverse of vascular activity.

The same conclusion arises also out of the consideration of cadaveric rigidity, for in this case we have a state of tetanoid, or rather cataleptoid contraction, which subsists with stagnation and death of the blood, and which endures untiringly until the muscles are broken up by incipient decay.

In spasms, therefore, as in tremulousness and convulsion, there is abundant evidence of a decided lack of circulatory power. It would seem, also, as if that lack were greater in convulsion than in tremulousness, and in spasm than in convulsion.

II. The condition of the nervous system in the disorders under consideration

is only to be determined by a separate examination of the chief ganglionic masses, and to this examination we therefore proceed. We would premise, however, that the designation, *nervous*, which is usually applied to this class of maladies, is itself an argument that they are not marked by any undue nervous activity, for, by a complete perversion of its true meaning, this word has come to signify the very reverse of any kind of activity. We would premise, also, in allusion to an error which has not unfrequently been mooted in our hearing, that convulsion can in no way be confounded with violent voluntary exertion. In truth, there is no possible analogy, and every difference, between them; for in the one the muscles contract independently of, and in spite of, the will, and in the other in obedience to it. The muscular contractions which constitute convulsion are violent enough; but, whatever their cause, they are altogether independent of true voluntary effort.

(*a.*) What, then, is the condition of the brain in the affections allied to epilepsy?

1. Mental activity is inconsistent with any kind of tremulousness. In ordinary cases, where the disturbance is but transient, the thoughts and feelings range at random, and the mind and all its energies are unmanned; in palsy, a permanent blight has fallen upon the brain; in chorea, the state is one of imbecility or fatuity, or one which rapidly tends to become such; and so also in the tremors induced by mercurial fumes, when these are fully manifested. In rigor, the state is one of languor or stupor; in subsultus, of wandering silliness. In delirium tremens, the only difficulty is in the term delirium; the perspiring skin, the fluttering pulse, the melancholy nature of the delusions, the treatment demanded, all show the real state of the case. When it is otherwise, and the delirium and other symptoms partake of an active character, the complaint is then delirium *e potu*, but no longer delirium tremens; for just in proportion to the gain of mental activity is the loss of the distinctive tremor. The cessation of tremulousness during the mental quiescence of sleep may seem opposed to the idea that tremulousness, among other things, depends upon a diminished state of cerebral activity; but this, in reality, is only an apparent objection, to be accounted for, probably, by the forgetfulness of the presence and scrutiny of others (the fear of which is a very important cause of trembling), by the comforts of a warm bed, by the lessened expenditure of vital force in the recumbent position, and by other and equally obvious causes.

2. Insensibility and unconsciousness are almost inseparable companions of convulsion. They go hand-in-hand in the convulsions of fever, of cerebral disorder, of teething, of hæmorrhage, of the tarantula bite, and of death; and they scarcely separate in ordinary hysteric convulsion. In hydrophobia, as in delirium tremens, the patient is overcome by a sort of vague terror, and there is a consciousness capable of suffering, but that is all. The frequent occurrence of convulsion during sleep is also an argument that the state of the brain during convulsion is one of inactivity.

Nor is there any better proof of undue activity in the convulsions associated with inflammation of the brain, or with spiculæ of bone pressing upon that organ; for in both these cases the convulsions do not occur in the stage of active delirium, but during the primary collapse, or during the subsequent loss of power occasioned by alterations in the structure of the brain, or by external pressure of various kinds. It is so with the convulsions which refer to sun-stroke, blows upon the head, or idiopathic inflammation of the brain; for in all these cases the mental faculties are inactive, or suspended during the convulsion.

3. Spasm is in like manner related to a greater or less degree of cerebral inactivity. Cramp is always most prone to happen during the mental quiescence of sleep; and the liability to this affection is infinitely increased whenever the functions of the brain are specially interfered with, whether this be by the slow inroads of old age, or of poisons, such as lead, or by the sudden attacks of disease. The spasm of cholera is attended by indifference, hopelessness, and other signs of mental prostration. The mind is in abeyance in catalepsy, and when otherwise its manifestations are at best those of a dreamy and imperfect consciousness. In tetanus the patient is agitated, alarmed, and absorbed in his sufferings, and that is all. In cadaveric rigidity all joys and troubles are at an end.

In these several instances of tremulousness, convulsion, and spasm, the mind therefore is either flagging, prostrated, or extinct, and never excited; and this conclusion is fully borne out by those cases in which the muscular disarrangement is confined to one side of the body in consequence of local mischief in the brain, for in these cases this derangement is always manifested on the side on which the muscles are unstrung and the nervous influence cut off, and not on the healthier side. These cases, indeed, are, as it were, experiments as to the real state of the nervous system in muscular derangement.

(*b*). The condition of the *medulla oblongata and spinal cord* in the affection under consideration is more obscure than that of the brain, and the evidence upon which a conclusion is to be based much less tangible. We will, however, endeavour to analyse this evidence, beginning with that which is derived from the state of the neck—evidence upon which so much has recently been written by Dr. Marshall Hall.

It is perfectly clear that the closure of the glottis in laryngismus stridulus is sometimes followed by cramps in the hands and feet, and sometimes by general convulsions; but it is not equally clear that these symptoms are caused by the closure. Ordinary attacks of this affection are without any spasm or convulsion, except that which exists in the throat, and yet the larynx is completely closed, or apparently so. In cases also where spasm or convulsion are present, it not unfrequently happens that such spasm or convulsion may alternate with, or distinctly precede, the closure of the glottis. These facts, which are familiar to all who have taken the trouble to watch a few cases of this malady, or even a single case faithfully, and which have not escaped the notice of the best writers on the subject, enable us to conclude, that the glottis may be closed in laryngismus stridulus without the supervention of other convulsive symptoms, and that these general convulsive symptoms may arise without closure of the glottis.

There is also another fact which must not be lost sight of in considering the influence of laryngismus in muscular derangement. This is the much greater narrowness of the chink of the glottis, and the far greater disposition to spasmodic closure in this chink in young animals than in adults. Thus, on dividing the laryngeal nerves in a young dog, this chink immediately closes, and suffocation follows; but not so in an adult dog, though in this case there is a sensible interruption to the passage of air into the lungs. This fact also is in harmony with the history of laryngismus stridulus, which history is to the effect that this affection (where it is independent of local disease) is almost exclusively confined to children.

What, however, are the clinical facts on the subject? Does laryngismus exist, or does it not, in the affections allied to epiplepsy? In epilepsy, as I have endeavoured to show, the preponderating evidence is in the negative. I have sat for hours in wards where many epileptics were gathered together, and have seen scores of fits at these times, without once hearing the crowing

respiration of laryngismus. Nor would it seem to be different in the affections allied to epilepsy. There is no crowing gasp in any kind of tremulousness. In hysteric convulsion it has not fallen to my lot to hear it, nor is it described by others. In hydrophobia, the state of the throat might naturally lead one to suspect its existence, but it is not mentioned in the description of cases. Nor is it otherwise with the convulsions of fever. Even in children it cannot be common, or it would have been mentioned, for it is too remarkable a symptom to escape notice. So also with the convulsions of death. Cramp is certainly independent of laryngismus, for the patient affected is at liberty to shout and howl to any extent. The voice is often extinct in the spasms of cholera, but the breath passes freely in and out of the chest. In catalepsy the breathing is not absolutely suspended, and the muscles of respiration are freer, or as free as any other muscles in the body. In tetanus the breath is much disturbed, but this disturbance is clearly owing to fixation of the ribs and diaphragm rather than to any laryngeal closure; indeed, the whole course of the malady goes to show that the spasms begin in the voluntary and not in the involuntary muscles, and that the latter muscles are only implicated when the tetanic state has proceeded to an almost fatal extent. In cadaveric rigidity, also, laryngismus can scarcely be supposed to play the part of a cause.

In all these cases it is to be borne in mind that the crowing inspiration is after and not before the laryngismus. If it were before, it might now and then have escaped notice, for the actual commencement of a fit is seldom seen; but being afterwards, when the attention has been fully aroused by the fit, it could scarcely have escaped notice if it had existed. Indeed, if laryngismus played the part which is ascribed to it, every severe kind of fit ought to end in a hoop, which is certainly not the case.

The conclusion, therefore, is the same as in epilepsy, for the history of laryngismus stridulus, the physiological anatomy of the larynx, and the want of clinical proof, all go to show that laryngismus is only an occasional and unimportant symptom in muscular derangement, and not so all-important a cause as we have been led to suppose it.

Trachelismus is, no doubt, an important feature in some varieties of convulsive disorder, and indicative, among other things, of serious venous engorgement in the brain, medulla oblongata, and nuchal portion of the spinal cord; but that this congestion has much to do with the convulsion or the insensibility which often accompanies convulsions, is not so certain.

First of all, nothing is more evident than that tremor, convulsion, or spasm, may occur without trachelismus. In all kinds of tremulousness the neck either preserves its natural appearance, or is positively shrunken and bloodless, and the mental state is one of morbid sensibility—not of stupor. In hydrophobia, where it might be expected to be different, there are some cases in which a most careful examination can find no trace of trachelismus. This was the case in the patient which fell under the notice of my brother, to which allusion has been already made. Again, in cramp and cholera there is neither fulness of the neck, nor any symptom approaching to stupor.

In the next place it is perfectly clear that, in many instances, the insensibility is not comatose, but syncopal in its character, and, therefore, not referable to the venous engorgement occasioned by trachelismus. The insensibility of the hysteric convulsion is most generally (we believe invariably) syncopal. The insensibility of convulsion from mortal hæmorraghe is manifestly of the same nature, for the vessels at the time are well-nigh empty; and so also with the insensibility attendant upon other kinds of death-struggles, for the cold, pale, and shrunken face, and the faltering pulse, are not to be mistaken.

Even when there has previously been coma, this would seem to have passed off and blended into syncope before these struggles happen. The insensibility of catalepsy is evidently closely akin to that of cadaveric rigidity, and that of cadaveric rigidity is one of emptiness of the capillaries, and utter stagnation of the blood—mortal and continuing syncope.

Few cases are, therefore, left, in which trachelismus can exist—namely, the convulsion of the beginning and end of certain febrile and inflammatory affections; and even in these cases that existence is often more than doubtful. Often, particularly in children, these convulsions set in when the face is cold and pale, and the pulse syncopal, and when everything indicates continuing sinking. Repeatedly, the pulse cannot be felt at all; and at best, it is far below its natural energy and activity.

There can be no doubt that venous engorgement in the head and neck *may* cause convulsion and insensibility; but that convulsion and insensibility *are* frequently so caused, the foregoing arguments would seem to render more than doubtful. Indeed, this may be said to be the natural deduction from the history of ordinary apoplexy, which history is, that the cases accompanied by convulsion are not those in which the face is turgid and the pulse full, but those in which the face is cadaverous and the pulse miserable. The question is no doubt of considerable difficulty, and the more so as coma continually passes into syncope, or syncope into coma; but the general result, and the truth, as we take it, is what has been stated.

If, therefore, trachelismus and laryngismus are of such unfrequent occurrence as the foregoing remarks would go to show, the two great arguments for any special disturbance in the medulla oblongata and spinal cord fall to the ground, and there is an end of them as far as we are concerned.

The remaining evidence is scanty and easily disposed of. That congestion of the medulla oblongata which is met with in some cases of hydrophobia is certainly not necessary to the convulsion of this disease. This appears from its inconstancy, from the absence of any such phenomenon in other forms of convulsion, but chiefly from the presence of the congested gullet, of which, indeed, the congested medulla is but a part—a part by contiguity of textures. The tenderness of the lower part of the spinal cord, which is occasionally met with in hysteric convulsion, is of the same significance as the congestion in the medulla oblongata, of which mention has just been made. It is not essential to the convulsion, because in the majority of instances it is absent, and the back may be drummed upon with impunity to any extent: on the other hand, it may naturally be related to that morbidly sensitive state of the uterus, of which it is commonly symptomatic. The last evidence to be considered is that furnished by morbid anatomy; and of this it may be summarily said, that it is either nothing at all, or nothing which can be related with any degree of certainty to the muscular disorder.

Hence the conclusion that there is no over-activity of the medulla oblongata and spinal cord, and a strong suspicion of under-activity. This suspicion arises in the fact that the circulation is depressed, and that this depression involves a corresponding depression in nervous energy wherever developed—a suspicion which is borne out by the want of proper muscular tone, of which more will be said presently.

(*c*) The condition of the *sympathetic system* is usually obscure, and the present cases offer no exception to the general rule. It is, however, to be partially understood by reference to the state of these organs, the *irritation* of which is supposed to have so much to do with the several forms of muscular derangement, or rather to the state of the system with which this irritation is associated. Thus, where the gums are at fault primarily, the health of the

child is broken down, and the convulsion chooses the collapse of the super-induced hectic or fever. Where the uterus is chiefly concerned, the health has been previously undermined by pain or by sanguineous and other exhausting discharges. Where the stomach is to blame, it is the old story of no supper or pork supper, of hunger or repletion—of prostration in either case. These collateral circumstances seem to imply a corresponding inactivity in the sympathetic centres, in connection with the irritated organ; and there is no evidence in morbid anatomy or elsewhere to contradict this conclusion. Indeed, as has been already argued, the depression of the circulation implies a corresponding inactivity in the sympathetic as well as in other ganglionic centres.

Such, then, is the evidence furnished by a review of the condition of the nervous system. There is most unequivocal proof of an inactive state of the brain in tremor, convulsion, and spasm; and a proof scarcely less conclusive of a similar state in the spinal or sympathetic systems; but there is no proof whatever of any kind of over-activity.

III. The state of the *muscular system*, which is the problem next in order, is readily determined. In the chronic disorder, whether this take the form of tremor, convulsion, or spasm, muscular weakness or wasting is constant; in the acute disorder, prostration. The weakness and wasting of the chronic disorder is well illustrated in a class of cases which has recently attracted considerable attention on the continent, under the title of 'trophoneuroses,' and one of these cases will well serve as a preliminary to the present section. The case we select is reported by M. Charles Bernard, in a recent number of the 'Gazette Médicale de Paris.' It occurred in the Hôpital de St. Marguerite, at Paris, under the care of M. Tessier. The patient was twenty-four years of age, of moderate height, brown complexion, and spare figure. The malady consisted in considerable atrophy, with continual convulsive agitation, and constant contraction of the right side of the body, the other side being in a healthy condition. The atrophy was more marked in the trunk and limbs than in the countenance, but extended in a greater or less degree to the whole of the affected side. When at rest the atrophied muscles felt much softer than they ought to do. The convulsive movements were more marked in the limbs than in the trunk, and more in the upper than in the lower limb. The accompanying contraction caused the arm to be flexed and the hand grasped, the leg extended, and the heel drawn up so that the toes only rested on the ground; and these positions were so fixed as not to be altered without considerable force. The intelligence and sensibility were little affected; but the eyes were unnaturally prominent, the pupils dilated, and the sight feeble. Respiration, digestion, and the other functions of animal life were perfectly healthy. These symptoms had first shown themselves after some cerebral attack attended with stupor, and had subsequently become aggravated after some similar attacks; but the precise history was somewhat imperfect. This precise history, however, is not of vital consequence to our present purpose, for what concerns us is sufficiently obvious—namely, the coincidence of convulsion and spasmodic contractions with unmistakeable atrophy and weakness of the affected muscles. This coincidence is also all the more striking by the marked contrast presented by the healthy side of the body, on which the muscles were of proper dimensions and firmness, and without any sign of convulsion, contraction, or loss of voluntary power. Similar cases are common enough in hemiplegia. But to proceed to the questions immediately under consideration:

1. In ordinary tremulousness, then, the muscles may be supposed to be more delicate than ordinary muscles, because delicate women and delicate

people generally are the subjects of this affection. In palsy, the muscles, without exception, are weak and wasted, and often partially degenerated into fat. In chorea and in mercurial trembling they are remarkably wanting in fulness, strength, and reparative energy. In rigor and subsultus all true motive energy is wanting.

2. The state of the muscular system in hysteric convulsion is virtually the same as in nervous tremulousness, only worse. In hydrophobia the real state is less apparent, but in no way contradictory; indeed, the fact that the convulsions continue with equal severity, and often increase in severity, in spite of the rapid and progressive exhaustion, is an argument, to say the least, that such strength is unnecessary to them. In tarantism the same argument will apply, for the dancings seem to have become more violent as the strength of the dancer gave way. In fever, and therefore in febrile convulsion, the muscles are singularly devoid of power, and at times they are much wasted, or in a semi-disorganised state, similar to that in which the blood is found. In the convulsion of dissolution the muscles are in a very variable state: they may be emptied of blood by hæmorrhage, wasted to mere threads by chronic disease, or half disorganised by the workings of some putrid poison, but they are always exhausted, and that in the highest degree.

3. The state of the muscles in the spasmodic form of muscular disorder is virtually the same as in the two other forms. Cramp is always associated with delicacy and weakness, and often with unmistakeable atrophy, as in palsy, and particularly in the palsy caused by lead poisoning, where often the red structure is entirely lost. Cholera spasms coincide with the feeling of utter muscular prostration. Catalepsy is closely akin to hysteria and chorea, and the evidences of debility are equally apparent. The state in tetanus is more difficult to determine. There was unequivocal loss of tone in the cases which have been mentioned; and there is a probable loss of tone in all cases, for (to use a former argument) the spasms undergo no mitigation, and often augment in violence in spite of the progressive failure of the vital powers. Lacerations of the tetanized muscles are certainly no proof to the contrary, for if these prove anything, it is the loss of power in the lacerated parts. Rigor mortis, again, is coincident with absolute death. Nor can this condition be referred, as some suppose, to some lingering vitality in the muscles, for the time of its accession is inversely related to the degree of this vitality; that is to say, it occurs sooner in muscles the strength of which has been previously exhausted by old age or consumption, than in the muscles of a man who has been suddenly cut down in the full vigour of health. The appearance of rigor mortis coincides in fact with the departure of animal heat; and this departure, as is well known, is longest delayed in strong and vigorous persons. This delay, however, must not be confounded with that want of cadaveric rigidity which has place in some cases of typhus, or in certain venomous bites, in which cases the blood has lost its coagulability, and the muscles their contractility, and where, consequently, the muscles are no longer muscles.

In the majority of instances therefore the muscles are in a state of debility, atrophy, degeneracy, or prostration—one or more; and in the few in which there can be any doubt, the preponderating evidence is to the same effect. In no one instance is there the least sign of hypertrophy or hyperactivity; and hence the conclusion respecting the muscular system harmonizes with the previous conclusions respecting the vascular and nervous systems.

IV. Such being the conditions of the vascular, nervous, and muscular systems in these disorders, it only remains to say a word upon the causes which induce these conditions. What then are these causes?

1. The causes of trembling are very apparent—cold, hunger, fatigue, fear, and the like; causes of whose true causality instinct and experience alike assure us. This is the case with all kinds of trembling, whether occasional or permanent—whether the result of infirmity and age or of mercurial poisoning. The same rule applies to choraic agitation. Cold is perhaps the commonest initiative. A case lately in Hanwell was that of a pauper, whose occupation had been to break stones on the high road, and who one day, after having been exposed to cold for several hours, was seized with chorea in such a way that his arms and legs continued to go as if they were still breaking stones. Fright perhaps ranks next in order to cold; and when chorea originates in this way it may be said to be a continuation of that *startling* which all experience under like circumstance. Hunger and fatigue are important adjuvant causes. The tremor of delirium tremens is the result of the stoppage of some or other stimulus to which the system had been accustomed. Rigor refers most generally to the depression of a zymotic poison; subsultus, like the trembling just mentioned, to the cessation of some previous excitement. In all these cases, the real nature of the causes at work is further manifest in the fact that the opposites, such as warmth, wine, rest, hope, and so on, invariably afford relief.

2. The causes of hysteric convulsion are of the same order as those which operate in trembling and choraic agitation—as, indeed, might be expected from the manner in which startling and violent chorea blend into this form of convulsion. The cause in convulsion from hæmorrhage and from other modes of death is sufficiently obvious. Anti-vital influences have been at work in the production of fevers, and therefore in the convulsions of fever. A depressing poison has contaminated the blood in the convulsions which refer to the retention of urea. An animal poison has acted in hydrophobia and tarantism, and all such poisons are more or less depressing in their nature, often frightfully so. The frequent occurence of convulsion at night is also an important fact in the causation of convulsion. It is common to all convulsions, and is of great significance as confirmatory of the previous data, for at night the vital stimuli supplied to the body are much less energetic than those which are supplied during the day.

3. Exposure to cold, particularly at night, when the diurnal stimulus is withdrawn, and the bed without sufficient covering, is the commonest cause of cramp. A similar exposure is also a frequent cause of catalepsy. In the case already mentioned, the rigidity was induced by playing out of doors in cold weather, or by undressing in a cold room. It had been so induced on the morning when he was brought to me, and it did not pass off until he had been some time in the warm room—until it had had time to thaw. One main cause of cholera, and therefore of choleraic spasm, is a poisoned atmosphere. Tetanus, we learn from army surgeons, is most apt to occur when soldiers are dispirited, exhausted, ill-fed, and exposed to cold. Cadaveric rigidity is the work of death.

In short, the *causes* of tremor, convulsion, and spasm, are such as go to confirm the deductions arising out of the *condition* of the vascular, nervous, and muscular systems; and the condition of these systems reacts in confirming the idea that these *causes* are, as they seem to be, of an anti-vital character.

*Conclusion.*—As in epilepsy, therefore, so in the affections allied to epilepsy, the whole body of evidence goes to show that tremor, convulsion, or spasm are coincident with, and dependent upon, deficient activity in the vascular, nervous, and muscular systems, and that the inducing causes are of an anti-vital or depressing character. The

teachings of muscular pathology are, indeed, in harmony with those of muscular physiology,* which teachings are to the effect that there is one law for organic and inorganic contraction, and that muscular contraction, like the contraction of a bar of metal on cooling, is the result of unresisted molecular attraction on the *departure* of certain forces or stimuli previously present, the only difference in the case of the muscle being that these forces or stimuli are more numerous and more complex.

7. *Researches on the Pathology of Obstruction of the Veins, and the Nature and Proximate Cause of Phlegmasia Dolens.*†—The following is the abstract of Dr. Mackensie's researches upon this subject, as contained in the paper which was recently brought before the Royal Medical and Chirurgical Society:

The author observed, that the facts brought forward by Dr. Davis (vol. xii of the 'Transactions'), with reference to the important relations subsisting between certain lesions of the crural veins and the general phenomena of phlegmasia dolens, had been generally recognised, and fully substantiated by the investigations of various pathologists; but that the conclusions drawn from them had not been accepted with the same unanimity, for, while many concurred with Dr. Davis, that the affection of the vein was the proximate cause of the disease, others believed it to be of secondary importance, and estimated it rather as an effect. It was the design of the present communication to inquire more particularly into the correctness of these respective opinions. After noticing the general characteristics of the disease, as defined by Callisen and Hall, he stated, that the local manifestations were characterised by two principal conditions—first, by a persistent and peculiar swelling of the affected limb, with a degree of tension, heat, firmness, and elasticity, not common to ordinary œdema; secondly, by an impairment of the nervous and muscular functions of the limb, indicated by pain, tenderness, and loss of motor power. The author then details a series of experiments to determine how far these conditions could be produced in parts where the veins had been artificially inflamed. The experiments consisted of three series:—1. The application of ligatures to the iliac veins, followed by observation of the results at certain definite periods after the operation. 2. Chemical and mechanical irritation of the lining membrane of the iliac veins. 3. The effects of sustained compression of the femoral veins by metal plates. Then followed a full description of the experiments, which were made on dogs; and the state of the limb, the constitutional symptoms, and the dissection after the animal had been killed, were in each instance carefully recorded. The principal facts elicited by the first series of experiments—viz., ligature of the iliac veins—were, that the constitutional disturbance was very transient, and referable rather to the extensive wound necessary to expose the vein, than to the operation of the ligature. The morbid effects of the ligature were, slight thickening of the coats of the vein, and a loose, black, non-adherent coagulum, at the immediate spot of the ligature. In forty-eight hours there was increased opacity, thickening, and vascularity at the seat of ligature, and ulceration of the coats of the vein. In seventy-two hours, the coats were nearly ulcerated through, and the vascularity and thickening, both above and below the ligature, became greater. In ninety-six hours, the vein was completely divided

* Philosophy of Vital Motion, 8vo, Churchill, 1851.

† Medical Times and Gazette, March 26, 1853.

by the ligature, and the parts above and below highly vascular, infiltrated, and swollen. A coagulum extended downwards, and was slightly adherent at the point of division. On removing the coagulum, a shreddy, patchy appearance was left, occasioned by its partial adhesion to the lining membrane. The author thought that these consequences of crural phlebitis, induced by ligature, differed very widely from those observed in phlegmasia dolens. The constitutional symptoms were more transient, and the local symptoms trifling, as compared with this latter disease. But while the morbid effects of ligature of the vein did not altogether accord with the phenomena of phlegmasia dolens, they, on the other hand, were indentical with such as have been observed from time immemorial in connection with wounds, injuries, and operations upon these vessels. The author next proceeded to detail the results of irritation of the iliac veins by chemical and mechanical agents. He employed strong solutions of nitrate of silver, and solid pieces of bougie fastened within the vein. Inflammation, localised to the seat of the experiment, was in each case produced; but in this series neither the local nor constitutional symptoms were those characteristic of phlegmasia dolens; and if the foregoing experiments possess any value, they indicate that this disorder was not producible by inflammation or obstruction of veins, however rapidly induced. In all these experiments there was an absence of constitutional fever; the swelling of the limb was neither elastic nor abiding, but simply œdematous, and there was no impairment either of its sensory or motor functions. With such facts demonstrated, the author was of opinion that the affection of the veins was not the sole or even essential lesion, or the proximate cause of the complaint. The problem then to be solved was, what were the specific causes or conditions which can simultaneously affect the sensory, the motor, the secretory, and the vascular organs of the affected extremity, so as to give rise to the concurrent phenomena by which phlegmasia dolens is characterised. Were they local or constitutional? and in what did they respectively consist? The author then directed attention to the pathology of venous obstruction, and pointed out the contradictory opinions expressed in regard to it. He showed that phlebitis might exist in a variety of ways, and yet not induce phlegmasia dolens, although many writers had somewhat vaguely asserted the former to be a necessary precedent condition. In relation to this branch of the inquiry, the subject of irritation and injury of the external coat of veins, as connected with the causation of venous obstruction, next engaged attention. Experiments were detailed, in each of which the external coat was either mechanically injured, or irritated by the free application of some corrosive or chemical irritant. Others followed, in which the internal coat was similarly treated, to illustrate the causation of venous obstruction. In these last experiments, it was attempted to ascertain how far could be reconciled the conflicting opinions on the one hand, that phlebitis was primarily induced, and that effusion of lymph, and coagulation of the contained blood, was the subsequent cause of obstruction; or, on the other, that the blood was first coagulated by the irritant, and that phlebitis and obstruction followed. In these experiments the vein was first emptied, and a space included between two ligatures. Chemical irritants were applied to the lining membrane, and the blood subsequently permitted to flow through. The agents employed were, solutions of the bichloride of mercury, sulphate of zinc, and nitrate of silver. Veins thus treated contained only some traces of fibrinous-looking matter, having no analogy to coagulable lymph, and evidently deposited upon rather than exuded from the vein. The author thought that veins were not ordinarily obstructed by the effusion of such lymph, although it was not his intention to affirm that this never took place. He next offered some observa-

tions on the obstruction of veins from spontaneous coagulation of the blood consequent on extreme vital exhaustion, as well as upon its coagulation from the direct action of morbid secretions. Upon the latter branch of the subject, reference was made to the papers on the Pathology of Phlebitis, by Mr. Henry Lee, and to the opinion of that gentleman, that the admixture of pus and other morbid animal secretions with the blood caused coagulation whenever these fluids were received into the veins; and that from the coagulum so formed a pellicle was separated, which became vascular, and finally firmly united to the circumference of the containing vessel, so as to become inseparable from it; but, upon reference to direct experiment, the author was unable to verify these conclusions. The foregoing investigation led the author to the following deductions:—1. That inflammation of neither the iliac nor femoral veins would account for or give rise to phlegmasia dolens. 2. That the extensive obstruction of the veins met with in this disease is not producible by merely local causes, such as injury or inflammation of these vessels. 3. That irritation of the lining membrane of veins, independently of such local injury or inflammation, will alone give rise to obstruction of these vessels, to an extent commensurate with that of the irritation which may have been excited within them. 4. That extensive irritation of the lining membrane of veins, giving rise to obstruction, and all the phenomena of phlebitis, may be excited by the presence of various unhealthy matters in the blood, circulating within this fluid, and determined upon particular portions of the venous system. 5. That the origin of the disease is, therefore, to be sought for rather in a vitiation of the circulating fluid than in any local injury, inflammation, or disease of the veins. The author then referred to the causes capable of giving rise to an unhealthy condition of the blood; these were either local or constitutional; unhealthy secretions, suppuration, and discharges, belonged to those favorably circumstanced for re-absorption; and he proceeded to consider how far these deductions were supported by the clinical history of phlegmasia dolens. To determine this, he had carefully analysed and arranged, in a tabular form, the principal facts of a hundred cases, reported in special treatises, or in the periodical journals. These tables contained the particulars of sixty cases, which occurred in connection with child-bearing, and of forty arising from other causes. The former class contained twenty deaths and forty recoveries, the latter, twenty deaths and twenty recoveries. The inference to be drawn from these cases was, that the disease was essentially a blood disease; that it had the same general laws, similar tendencies, and required the same principles of treatment as other blood diseases; and that the affection of the veins, like that of the nerves, the lymphatics, and the areolar tissue of the limb, was essentially secondary to, and dependent upon, an antecedent vitiation of the circulating tissue. The results of clinical experience thus harmonised with those of physiological research, and the author hoped that this investigation might not be altogether unimportant in its application to practice.

8. *Dr. Küchenmeister on the Action of Anthelmintics.**—In this inquiry the principal experiments were performed by immersing the worms of dogs, cats, and other of the lower animals, in milk or fluid albumen, at a temperature of about 77° Fahr., and then adding the vermifuge to the fluid. Electricity was employed to test the actual death of the worm.

*Tape-Worms.*—The decoction of kousso and milk proved fatal in half an hour; turpentine and albumen, from 1 hour to 1 hour and

* Froriep's Tagsberichte über die Fortschritte der Natur und Heilkunde, Band i, p. 317.

a quarter; decoction of pomegranate-bark and milk or albumen, in from 3 hours to 3 hours and a half; etherial extract of male fern with albumen, in from 3 hours and a half to 4 hours; and castor oil with albumen, in 8 hours. Therefore kousso appears to be by far the most potent of the vermifuges.

Tape-worms placed in a salad containing onions and garlic, and dressed with vinegar and oil, died in about 8 hours.

Dolichos pruriens appeared to exert no poisonous influence, nor did brown oxide of copper, though the last excited violent mischief in the intestines of a cat, to which it was administered.

*Round-Worms.*—Santonine dissolved in castor oil caused death in about 10 minutes; but santonine in milk or in albumen had no appreciable influence; creasote caused death within 2 hours; common salt in from 2 to 6 hours; and the roe of the herring, or flour of mustard, in 4 hours. Turpentine and albumen, or petroleum, or oil of cajeput and albumen, were upon a par with common salt. A salad containing garlic and onions caused death in from 10 to 15 hours. Gallic acid, pomegranate root, and vinegar operated fatally in about 11 hours; but kousso and the other astringents required from 24 to 30 hours before they produced this result. Ordinary bitters acted very slowly and unsatisfactorily.

From these experiments Dr. Kuchenmeister recommends that in the case of round worms, a mixture of santonine and castor oil should be made in the proportion of from 2 to 5 grains of the former to the ounce of the latter, and a teaspoonful of this given until the desired effect is produced; and along with this he recommends salt and mustard with onions and garlic to be added to the diet of the patient.

9. *Dr. Golding Bird on Urinary Deposits, their Diagnosis, Pathology, and Therapeutical Indications.**—Dr. Bird's treatise on 'Urinary Deposits' is now so well known and approved as to require no further commendation. The present edition, however, has an additional feature of interest in the shape of a chapter on the action of diuretics, which chapter is the substantial germ of what Dr. Bird hoped to have developed, and which is well worthy of being developed, into an independent work; and to this chapter we will shortly refer, though any notice short of entire transcription must convey a very inadequate notion of its real value.

Dr. Bird returns in fact, though not in detail, to the old idea of crisis by urine, and adduces evidence to show that in ague, acute rheumatism, and some other disorders, there is a steady and considerable increase in the quantity of solid urinary excreta whenever the patient improved, and as remarkable a diminution when the symptoms relapsed. His "observations were neither small in number, nor hastily made; they extended over several years, and amounted to upwards of four hundred in number." He therefore in many cases recommends the employment of diuretics which will help to bring about and facilitate these favorable crises. Diuretics he divides into two classes, renal hydrogogues and renal depurants. The first are those which

* On Urinary Deposits, &c., by Dr. Golding Bird, F.R.S. Churchill, 8vo, 4th edit. 1853.

have no chemical influence on organic matters out of the body, and act almost exclusively in eliminating an increased quantity of water from the kidneys—such are squill, copaiba, broom, juniper, guiac, lytta, &c. The others exert a positive chemical influence upon organic matters out of the body, and increase the metamorphoses of the tissues in the body. They include the alkalies, their carbonates, and their salts, with such acids as in the animal œconomy are capable of being converted into carbonic acid, including the acetates, tartrates, and citrates of soda and potash.

Of the effects of renal depurants upon the urine, Dr. Bird gives the following illustration as an example of the rest:—

A young lady was for some time under my care, labouring, among other things, under a condition of the orifice of the urethra, which prevented her passing water without the aid of a catheter; thus admitting of a very accurate examination of the quantity secreted in twenty-four hours. This, when no medicine was exhibited was collected and examined; and afterwards three drachms of acetate of potash being administered in the course of twenty-four hours, the urine collected in that time was analysed. The results are shown in this table—

| | Without medicine. | After ℥iij pot. acet. |
|---|---|---|
| Quantity of urine in twenty-four hours | f. ℥xvj | f. ℥xlvj |
| Specific gravity of | 1·025. | 1·017 |
| Solids in | 416 grs. | 782 grs. |
| Uric acid | 2·6 | 3·45 |
| Urea | 130·5 | 202·40 |
| Soluble salts. | 72·0 | 248·40 |
| Insoluble salts | 21·6 | 32·25 |
| Organic matters not included in the above | 159·3 | 295·50 |
| | 416 | 782 |

The results of these analyses, (proceeds Dr. Bird,) show that, after deducting the excess in the amount of soluble salts, arising from the conversion of acetate of potass into carbonate in its transit from the stomach to the kidneys; the solids of the urine separated from the blood under the influence of the chemical diuretic, exceed those excreted without its aid by 190 grains. We further learn that although a large proportion of matter was metamorphosed into both uric acid and urea after the administration of the acetate, still that the greatest increase was in that mixture of organic matter set down as *extractive*, and which, as we have seen, consisted chiefly of creatine, creatinine, uroxanthin, and matter rich in sulphur. In the example adduced, not only did the patient lose an excess of thirty ounces of water in twenty-four hours, but she *wasted* to the extent of 190 grains more than if no remedy had been given, and to this extent had the blood been depurated of those elements which yielded most easily to the influence of the alkaline salt. (p. 430.)

Dr. Bird also adduces instances in support of the beneficial operation of renal depurants in several affections, and of acetate of potass in particular, in daily quantities of from 2 to 3 drachms. The acetate, however, is not recommended exclusively.

Although in these remarks, (writes Dr. Bird,) I have especially alluded to the acetate of potass, yet I have merely selected it as a type of a large

class of remedies, many of which equal it in their remedial effects. The citrates and tartrates of potass and soda constitute remedies of probably equal value. Indeed the utility of the popular 'saline draughts' of these salts is in all probability to be explained by their influence as renal depurants. The solution of potass and soda, as well as their carbonate, are most useful remedies of their class, but decidedly of much less value than the acetates and citrates. Two reasons may be given for this:—first, they are very likely to become neutralised while in the *primæ viæ* by acids, which, like the hydrochloric and phosphoric, are not decomposed by passing through the circulation; secondly, the conversion of acetates and citrates into carbonates takes place in the blood, and thus they in *the nascent state, when their chemical tendencies are at the highest*, come in contact with those matters which is important to eliminate from the blood. It is well known that a considerable quantity of liquor potassæ is required to render the urine even neutral, whilst a few grains of an acetate or tartrate will rapidly render it alkaline. (p. 442.)

10. *MM. Casorati and Robin on the Employment of Oxygen or Ozone Inhalations in the treatment of Albuminuria.**—M. Casorati has recently suggested that the inhalation of oxygen might be employed beneficially in cases of albuminuria, for the purpose of promoting those processes of intra-corporeal combustion, the failure of which is one main cause of the complaint; and still more recently M. Robin has suggested the employment of ozone or electrified ozygen for the same purpose. M. Robin prefers ozone as a more powerful respiratory excitant than ordinary oxygen, and this greater power he endeavours to exhibit experimentally by the time required to restore two birds to activity which had been completely anæsthesiated. He placed one of these birds in a jar of ozone and the other in a jar of oxygen, and found that the first recovered with much greater rapidity, but with considerable agitation, while the other recovered slowly and quietly.

M. Robin's suggestion is contained in a note addressed to the Academie des Sciences at Paris. It is without any case. M. Casorati's suggestion has been submitted to actual experiment in a case which we transcribe below, and which was first published in the 'Gazzetta Italiana Medica Lombarda,' for May, 1852.

The patient was a spare, sober man, æt. 50, who had been suffering from albuminous diabetes for upwards of twelve months. The urine was excessive in quantity and highly charged with albumen, but without sugar. The flesh was rapidly wasting away. There was no perceptible organic disease.

On March 1, 1851, he began to respire the contents of two bladders, each containing 2 lbs. of a mixture of oxygen with a fourth its weight of atmospheric air. By degrees he employed pure oxygen, and increased the quantity to four bladderfuls a day, the only immediate effect being a not altogether disagreeable sensation of heat at the epigastrium. In eight days the quantity of urine had sensibly diminished and its albuminous constituent lessened, the pain at the epigastrium had abated, the pulse had improved, and the skin had begun to recover its natural warmth and moisture. The inhalations were continued until the 19th, when some slight pulmonary symptoms caused them to be laid aside for five or six days. They were resumed on the 31st, and continued for a week, when they were again laid aside, and for the same cause. On the 10th of April they were again resumed and persevered in until the 15th,

* Gazetta Ital. Med. Lomb., May 1852; and Gaz. Méd. de Paris, Jan. 1 and 29, 1853.

when they were discontinued until the 19th, the supervention of the old pulmonary symptoms being still the cause of the discontinuance. On the 19th they were again resumed to the extent of two bladderfuls in the course of the day, and here the report ceases. During this treatment the diabetic symptoms gradually subsided, and where the report ends the albumen had almost entirely disappeared from the urine; the urine itself was reduced to its normal quantity. The appetite also was natural, the perspiration free, and the patient progressing favorably in every particular.

11. *Dr. Gray on Rennet in Diabetes.**—The following cases will be read with interest by all, for all must be wishful to know the result of Dr. Gray's important suggestion concerning rennet in the disease in question. They are the only cases which have fallen in our way; but Dr. Robertson, the editor of the 'Monthly Journal of Medical Science,' says that he has employed rennet, and heard of its employment in several cases, and that the results show that the remedy is not applicable in all cases and circumstances.

*Case* 1.—John Dryburgh, a married man, 44 years of age, one of the foremen employed at St. Rollox Chemical Works, temperate and regular in his habits, had always enjoyed good health until August 1850, when he observed that his calls to make water were more frequent, and the quantity voided much greater, than usual. The increased discharge was accompanied by great thirst. These symptoms gradually increased, until they became so aggravated that, he says, "had it not been for shame, I could have remained constantly by the well, drinking and making water by turns." His appetite was upon the whole good, every article of diet agreeing with him, except cheese. He was habitually costive, and troubled with uneasy sensations about the epigastric region. He had also experienced numbness in the upper extremities, from the elbow to the tips of the fingers; and in the lower extremities from the knees to the toes; and he likewise had occasionally a sensation of heat rushing along the arm and forearm to the fingers, continuing about fifteen minutes, and then leaving him feeble, and unable to do anything for some time afterwards. He had lost upwards of three stones in weight; and was very weak, low-spirited, and unable to follow his usual employment. He had tried various remedies, all of which proved ineffectual in giving him the slightest relief.

On the 7th of July the countenance was expressive of great anxiety; he was much emaciated; the pulse was 66, full and regular; the respiration slow; the mouth dry, in consequence of which he was unable to articulate distinctly; the tongue coated with a thick yellowish fur: the appetite good; and the thirst excessive, so that he drank upwards of three gallons of liquids in the course of twenty-four hours. The urine was very abundant, of a bright straw colour, sweet to the taste, loaded with sugar, as indicated both by the sulphate of copper and the caustic potash tests, and in density 1045.

He was ordered a table-spoonful of creasote mixture, to be taken when the thirst was urgent; and ten grains of the alkaline phosphate of soda, three times a-day, in a glass of water. His diet was made to consist of beef, fish, tea without sugar, eggs, bran-bread, butter-milk, and water. Under this course of treatment, and attending to the state of the skin and bowels,—alternating the creasote with tincture of nux vomica and tincture of colocynth,—he continued for three weeks, with little improvement in the general symptoms, during which period the density of the urine varied from 1045 to 1037.

* Edinburgh Monthly Journal, Jan. 1853.

On July 30th, he was directed to take a tea-spoonful of rennet* in a glassful of water after each meal, and to continue the alkaline phosphate of soda.

On August 3d the thirst was not quite so urgent, and he thought he did not pass so much water. He complained of distressing pain in the fore-arms and legs. He did not disrelish the animal diet. Urine paler in colour, and density 1027.

On August 7th he continued gradually improving, the density of the urine having descended to 1025. As the bowels were confined, he was directed to take ten drops of tincture of colocynth every four hours until the bowels should be acted on.

On August 13th he felt easier about the pit of the stomach; the pains in the arms and legs were not so troublesome; the urine was acid to litmus paper; contained no albumen, but a superabundance of sulphates, chlorides, and uric acid.

On August 21st he felt decidedly better; the thirst has greatly abated; the bowels were regular; the tongue clean; and he slept well. The quantity of food and drink now used in twenty-four hours was 3lbs. of meat, ¾lb. brown bread, seven cups of tea without sugar, eight ounces of water, and half as much butter-milk. The density of the urine was 1024; and there were only slight traces of sugar. The alkaline phosphate of soda was discontinued; and a few drops of muriatic acid were given along with the rennet.

He had a smart attack of diarrhœa on the 24th. On the 25th he gave up taking the rennet. The tongue was slightly coated with a yellowish fur; and the stools black coloured. He slept well. The quantity of urine passed in twenty-four hours was sixty-four ounces, and its density 1022·5.

I could not detect the slightest trace of sugar by the caustic potash test. The uric acid was present in lozenge-shaped crystals. Lactic acid was found by Pelouze's test; that is, on boiling the urine with caustic potash, it became turbid, and when allowed to stand, a deposit fell to the bottom of the test tube, which, when placed on a slip of glass, partially evaporated, and, examined under the microscope, presented numerous crystals, some of them much resembling a sheaf of corn, and others arborescent. This deposit is dissolved on the addition of a solution of prussiate of potash.

On August 28th the tongue was clean and moist. He had no longer any thirst, and took no more of fluid than he used to do while in perfect health. He was always ready for food, and was using more farinaceous food. He did not feel any uneasiness from being restricted to the diet prescribed. He had gained six pounds in weight. No rennet had been taken for three days. The density of the urine was 1024. The rennet was resumed.

On September 2d he felt daily stronger, had no thirst, and fewer calls to pass urine; slept well; felt no longer pains in the stomach, fore-arms, and legs; was able to work, and did so with pleasure; and had added three additional pounds to his weight. The urine was 1022, and presented slight traces of sugar.

On September 8th he still continued to improve, and gained flesh daily. The density of the urine was 1022; it contained lactic and uric acids; but, when boiled for some time with caustic potash, did not change colour.

On September 13th he said his health appeared to himself as good as previously to his illness.

On November 8th he felt quite well; had gained about two stones in

* It is necessary that the rennet be recently prepared, and a teaspoonful capable of coagulating a pint of milk in five minutes; as it not unfrequently happens that, by being kept for some time, it becomes decomposed. Its quality should therefore on all occasions be tested with milk before being used as a medicine.

weight. Since commencing the rennet the urine had a density of 1018, and no sugar could be discovered in it by any test. He was taking the ordinary mixed diet, and continued the rennet.

December 24th.—This patient continues to enjoy good health.

*Case* 2.—William Clarke, aged twenty-nine, ship-carpenter, married, of regular habits, had enjoyed good health until within the last three months, about which time he complained much of thirst, frequent calls to pass urine, general debility, and loss of flesh. These symptoms increased so much towards the close of autumn as to render him unable for his employment.

When I was first consulted by him on the 11th of October last, I found the urine to contain a large quantity of sugar, and its density to be 1044. He complained much of pain in the legs and forearms. The tongue was furred; and his articulation indistinct. He had lost a stone and a half in weight. The pulse was 78. There had been no cough.

He was ordered ten grains of the alkaline phosphate of soda three times a day, in water, and to live as much as possible on an animal diet.

13th.—Density of the urine 1040. A teaspoonful of rennet to be taken after each meal.

16th.—He felt a little easier, and the thirst was not quite so urgent. The density of the urine was 1034. He was directed to continue the rennet and phosphate of soda.

21st.—He was more cheerful, and returned to work. Specific gravity of the urine, 1035. The phosphate of soda was omitted.

25th.—Within the previous twenty-four hours he passed 252 ounces of urine, and used 196 ounces of liquids, half a quartern loaf, about two pounds of meat, three eggs, and a boiled cabbage. He perspires occasionally. Frequently troubled with heartburn. Urine 1030 in density. He has gained two pounds in weight.

30th.—He feels stronger in the arms and chest, and the pains in the legs are entirely gone; but there still remains a slight œdematous swelling of the ankle. Urine 1034 in density.

November 5th.—For the last twenty-four hours he has passed 108 ounces of urine. The thirst now not nearly so troublesome; the swelling at the ankle is gone; he feels stronger for his work; the tongue is clean; the pulse 76; the appetite good; the urine 1030 in density. He was now directed to discontinue the use of wheaten bread altogether, and, as a substitute, to have bread made with six eggs and four ounces of butter, kneaded into a loaf with common bran, and baked in a slow oven.

10th.—Within the last twelve hours he has only had three calls to pass urine. He has added four pounds to his weight since he was last weighed. He feels much stronger. The density of the urine is 1030; the sugar is greatly diminished, as shown by the tests; but there is a considerable quantity of lactic acid.

December 24th.—Soon after the last report, I directed him to use chlorine inhalation. I was led to make use of this remedy by the following circumstance. Conversing one day with John Dryburgh, he happened to remark, that, when he had occasion to go into the chlorine-room during his illness when his thirst was urgent, a free flow of saliva took place, which immediately afforded him relief. Under the impression that the chlorine might both act on the sugar circulating in the blood, and also in some way on the nervous system, I was induced to try it in Clark's case.

For ten days or a fortnight before using it, this man passed urine varying in density from 1030 to 1040. In a fortnight after first using it, the density fell to 1020, and every trace of sugar disappeared. During the last four

weeks the quantity has never exceeded fifty-six ounces in twenty-four hours, and the density has been pretty steady, between 1018 and 1020; nor have I ever been able to observe any sugar in it. Every symptom of the disease has now left him; he has regained his former weight; and he feels strong, and as able for his work as ever he was. His diet, however, has not yet been changed; but I have no doubt, judging from John Dryburgh's case, that, by and by, he may with safety return to his usual way of living.

*Case* 3.—I have now (December 24) a third case under my care, who has been ill for eight months. He had been treated in the usual way by several medical men, but without success. At first he made seventeen pounds of urine of the density 1037. Now the quantity is four pounds, and the density 1028. He has used both rennet and chlorine. Before commencing the treatment, his sight was much impaired; but it is now quite restored, and he has almost regained his original weight.

C. B. R.

# II.

## REPORT ON THE PROGRESS OF SURGERY.

1. *Mr. Haynes Walton on Operative Ophthalmic Surgery.**—If we may judge of this work by the flattering encomiums which have been already passed upon it by the press, and by our own impressions of its worth, it will be found to fill a gap which existed in this department of medical literature. Besides being a record of the author's own practice and experience, it embraces all the improvements that have been made in the surgery of the eye, and the greater part of the pathology of this organ. It is highly practical, and this merit is greatly enhanced by accurate and artistic plates. It is unimpeachable in a typographical and pictorial point of view.

With the exception of the author's views on entropion, which were noticed at full in our last volume (vol. XVI, p. 166), our present notices will embrace disconnectedly the more novel and important points.

Respecting *chloroform in ophthalmic surgery*, after many practical rules as to the mode of administration, Mr. Walton writes—

> Except the operation for the extraction of cataract, or the division of the cornea to a like, or nearly equal extent, for any other purpose there is no operation on the eye in which well-founded objections exist to the previous use of chloroform, or ether, as anæsthetic agents. In the exceptions mentioned, the objection arises from the fear of vomiting, and the loss of the vitreous humour. It is true that vomiting is but an occasional effect of the use of these agents, and it can nearly always be prevented by emptiness of the stomach previous to inhalation, and which is secured by enjoining a strict fast for four or five previous hours; but, after every precaution, vomiting may occur, or severe retching, which is equally injurious. Dr. Fleming, of Dublin, suggests that the patient should have, on the morning of the operation, a little milk beaten up with an egg and some brandy or wine; this, he says, has been found to obviate the sickness occasioned by the exhibition of chloroform on an empty stomach. Rather, therefore, than run even a slight risk of an event so untoward, it is better in these operations to forego the advantage of anæsthetic substances. There are a few exceptions where this risk is to be preferred to the great danger of operating without the inhalation: for instance, in extraction of a cysticercus or a foreign body, or an opaque

* A Treatise on Operative Ophthalmic Surgery, by Haynes Walton, F.R.C.S., Surgeon to the Central London Ophthalmic Hospital, 1853. London, John Churchill, 8vo, pp. 588—Illustrations.

capsule from a child; or for similar operations on an adult, including besides the extraction of a dislocated lens, when pain and irritability of the eye would render extraction in the ordinary way hazardous, from the impossibility of steadying the eyeball except by undue pressure.

Speaking upon *ophthalmic instruments in general*, Mr. Walton insists upon "lightness as an element of the highest importance. The lighter they are the greater is the delicacy with which they can be applied. With light instruments the resistance to be overcome is better appreciated, as well as the amount of force required for that purpose." Smallness of blades and handles of wood are advocated. "To all small instruments, such as cataract-knives, cataract-needles, and the like, round handles are to be preferred, for when of this form they can be held with more ease and freedom, while stiffness and constraint are overcome, and a more individual and independent control are given to the fingers." The advantage of smooth handles is enjoined; rules for testing the keenness of instruments are given; and all the instruments are delineated by full-sized figures.

The chapter upon *Injuries from Mechanical or Chemical Agents* contains much valuable information.

*Burns and scalds* of the lids are generally followed by very distressing contraction from the thinness and looseness of the skin, and the mobility of the tarsi. Paramount attention is therefore required, to prevent or to lessen the suppurative stage. Of all applications that I have myself tried and seen used, none are equal to nicely-dressed cotton-wool; it is soft, light, and cleanly. Where there is merely an abraded surface from loss of cuticle, it excludes the air and soaks up any superfluous secretion. If suppuration should exist, it absorbs the superabundant fluid, while enough is left for the purpose of sufficient moisture. With it, the sore does not grow flabby and indolent, requiring stimulants, as so frequently happens with water-dressing, and the granulations are kept in a condition that precludes the necessity for escharotics. I have frequently seen ordinary ulcers that had resisted other applications heal under this, the simplest of all means. The changing of this material is readily effected; any portion adhering to the sound skin must be wetted, and that over the raw surface will always readily separate when surcharged with moisture.

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*In Traumatic inflammation of the Eye-ball.—Bloodletting* is especially indicated when there is rapidly-declining vision, together with congestion or effusion in the posterior part of the eye, which is rendered probable by the bulging of the lens and iris towards the cornea, even though there should not be much external evidence of inflammation. . . . . No precise rule can be given as to whether the bleeding should be general or local; the practitioner must be guided by the individual peculiarities of each case. The necessity of moderation in the abstraction of blood cannot be too energetically urged. The quantity should be regulated by the local symptoms, and the age and general condition of the patient; otherwise, destructive, rather than conservative effects may result. Disease cannot be bled out of the eye, as some surgeons seem to think. At the same time when bleeding is indicated, a decided effect must be obtained.

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*Mercury* must not be lauded as a specific; for disease may continue to increase, even although the system be fully under its influence. . . . . .

Discrimination and judgment are as much called for in giving mercury as in bloodletting.

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In my own practice, I am in the habit of using mercury in very small quantities, and almost always prescribe the *hydrargyrum cum cretâ*, in doses of two, two and a half, or three grains, combining it with hyoscyamus or conium as the bowels may require, and repeating it according to the urgency of the case; but never more frequently than four times in the twenty-four hours, and rarely so often. . . . . I regard salivation as the poisonous influence of mercury; and I believe that the highest curative effect is to be obtained short of that state. At the same time, if a disease does not yield, and its violence be not lessening under its use, I should give the mercury till the mouth was in some degree affected, to ensure that the system was fully under its influence.

The potency and the manageableness of this form of the drug cannot be imagined by those who have not used it; and to those who are disposed to give it a trial, I would recommend that they should select cases of syphilitic iritis to commence with; for then its effects can be readily watched, and the results appreciated; and in them, moreover, the fact may be learned that the disease will readily cease without the mouth being made sore.

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In speaking of *Dislocation of the Lens* by violence these rules are laid down. In a subject more than forty years of age, when the lens has increased in density, and its removal by quick absorption cannot occur, I should perform the operation of extraction or depression, according to the rules given for this special occurrence, in the chapter on Cataract. Between the age of puberty and thirty, I should not interfere if the lens were in the anterior chamber without its capsule, and lying harmless; but where accompanied with irritation and with pain, I should extract or recline it according to circumstances.

The chapter upon *affections of the eyelids and diseases of the lachrymal passages* is one of considerable interest. Here are Mr. Walton's views on entropion, and several kindred topics,—among the rest, *symblepharon*, or partial adhesion of the eyelids to the eyeball, and *trichiasis*. The following quotations relate to the two latter topics. Operations for symblepharon, says Mr. Walton, are scarcely ever successful.

Several times, under what appeared to be most favorable circumstances, I have removed the cicatrices, and dissected off the bands and bridles, but the contraction has returned to the same or even greater extent. Indeed, in two instances only have I obtained a good result. In the first I was partially successful; the band which tied the centre of the lid to the globe encroached a little on the cornea, and was narrow, soft, and loose; I merely divided it twice, and each time it returned to its former state. I then removed a small central portion of what appeared to be the cicatrix of the band, and brought the edges of the divided conjunctiva, on the lid and on the globe, severally together by sutures, and the result was very gratifying. The last time I saw the patient, several months after the operation, there was but a slight contraction at the lower part of the interior of the lid:—a spot where there would, I suppose, be a certain amount of puckering, in most of these cases, under any plan of treatment. The globe of the eye was no longer unnaturally covered by the lid, and the feelings of restraint to its movements were lost.

In the second I was still more fortunate, for perfect success ensued. The patient, who was twenty-six years old, had, when a lad, accidentally received some quick-lime in his eye; and the usual process of adhesion of the lids to the globe followed cicatrization of the conjunctival slough. The connecting medium, which seemed to consist entirely of conjunctiva, was long and nearly isolated. Putting the lid on the stretch, I divided the band vertically through its entire thickness, carried the incision into the tissue below, and brought the edges of each side severally together by three sutures. In four days the stitches were removed.

Speaking of the palliative treatment of trichiasis, and of the pulling out of the cilia by forceps, which is the means of treatment naturally resorted to, and alone worthy of notice, Mr. Walton writes—

Of a means so generally adopted, (evulsion of the cilia by forceps,) and apparently so universally applicable, it is well to ascertain in what species of implication of the cilia it is advisable to be practised, and how long in any instance it may be persevered in. . . . . When the irritation is occasioned by a few well-formed, but inverted cilia proceeding from a healthy lid, there cannot be a doubt about the propriety of using the cilia-forceps. . . . . It thus becomes a mere matter of consideration to the patient whether he shall submit to the periodic repetition of the process, or to a rather more severe but effectual plan, resulting in a cure. But when the extraction is followed by an increase in the number of inverted cilia, or by abortive ones, the application of the cilia-forceps has reached its limit, and as a rule, should be discontinued. There cannot be a doubt that the continued removal of the cilia by force is very frequently hurtful to their follicles, renders the direction of them more perverse, causes abortive productions, tends to involve the contiguous-follicles, and so to multiply the trichiasis, and should not be persevered in except at the particular request of the patient. So also, where the lid is unhealthy, and the offending cilia, although few in number, are abortive, and grow directly inwards, extraction is contra-indicated; some effectual treatment only is admissible.

Excision of the cilia, either partially or totally, is recommended only as a last resource.

For partial excision of the cilia, the lid should be secured as in the operation for the removal of skin; an incision is then to be made on either side of the bunch to be taken away, long enough to reach beyond their follicles and through the skin and orbicularis muscle, and a third tranversely, at the very edge of the lid, falling in with the two vertical ones. The little flap is raised and intrusted to the care of an assistant, who keeps it turned up with an instrument or his finger, at the same time treating it with delicacy; directly the bleeding is checked, the mass of follicles, with the investing tissue, should be carefully hooked with the tenaculum forceps and dissected out. The flap is then to be restored and retained by three sutures, one on each edge.

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The entire excision of the cilia is called for where there is inversion of the hairs in more than one place; when one partial excision would be insufficient; or when there is inversion to a considerable extent. The indications are to remove the cilia with as little damage as possible to the tarsal cartilage, and to leave the punctum lachrymale untouched.

The whole subject of cataract is most ably treated, and very rich in topics of interest. The remarks upon lenticular coloration as

bearing upon the question of diagnosis seem especially worthy of study.

It has long occurred to me whether the lenticular coloration of age is, in itself, ever intense enough to produce opacity of the lens, in fact—a cataract; I think that it may, for how otherwise is the total absence of all appearance of greyness to be accounted for in cataracts which are occasionally extracted? Indeed, so far as I can judge, no difference is discernible between them and the lens in old age, except in the former being rather more coloured. In confirmation of this, I would draw attention to the fact that the coloration is often so apparent in life, and especially in dark races of men, that it may not at first sight be possible to say when cataract does, or does not exist. I have lately seen two aged mulattoes, with this amber change so apparent, that the most experienced surgeon might have been deceived, and have pronounced cataract to be present, if either of these persons had complained of defective sight.

It is further remarked, in connection with this subject, that—

The paleness, or light-yellowness that exists behind the pupil after middle life, is often thought to be symptomatic of amaurosis; it is, however, but the effect of the coloration of the lens, and is seen with or without defective nervous power; young persons with amaurosis never exhibit this appearance. It is this coloration that produces so much difficulty in diagnosis in adults. If a young person who is losing sight shows a dark pupil, we then at once declare that cataract is absent; but with impaired vision at the middle period of life, and in the aged, the question is not so readily determined; the natural colour of the pupil renders it difficult to discriminate the disease, and I do not hesitate to say that from this it may be impossible, unless other symptoms exist, at once thoroughly to understand a case; hence it is that surgeons, most experienced in ophthalmic disease, fall into error, sometimes pronouncing cataract to be present when amaurosis exists, and *vice versâ*.

The use of the catoptrical or candle test is declared to be very much less useful than it is supposed to be.

The catoptrical or candle test of Sanson may assist in diagnosis, but I have not found it so generally applicable, or so certain as I had been led to anticipate: it is founded on the optical law, that if a lighted candle or taper be held a few inches in front of the pupil of a healthy eye, three images appear each behind the other; the anterior erect, the middle inverted, and the posterior erect. The anterior, the most distinct, is formed by the cornea; the inverted or middle, the smallest, by the posterior segment of the capsule of the lens; and the posterior, the most indistinct by the anterior surface of the lens. A person unaccustomed to the test will not readily see these, unless the candle be moved about, and perhaps not even then, unless the pupil be dilated. Opacity of the lens or its capsule from any cause, to a degree that interferes with the transmission of light, obliterates all but the anterior image, which will remain as long as the cornea is clear. The middle and posterior images will be affected according to the degree of opacity in the surfaces that produce them. Thus far it is an unerring guide, but it is proposed to decide on the nature of the two diseases, glaucoma and cataract, according to changes in these images, on the grounds that incipient cataract obliterates the inverted image, and obscures the deep-seated one, and that glaucoma always renders the posterior erect image more distinct, and obliterates the inverted one only when much advanced.

The difficulty that I find in accepting this theory, is, that an eye, which would appear from the test to be glaucomatous, may at a later period prove to have cataract.

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The value of the candle-test is to be found chiefly in its application to the eye prior to the amber change in the lens; for then, if amaurosis be present, the three images will be seen clear and not blurred; if incipient cataract, the images within the eye must be affected according to the degree and seat of the existing opacity. In the aged, it may enable us to compare the degree of opacity with the imperfection of vision; but in them, in consequence of the amber change, the detection of incipient cataract is beyond its power.

Most of the instruments ordinarily used in operations for cataract are modified, and a new instrument, and apparently a very useful one, a "guarded curette," is introduced. The treatment of capsular cataract seems to be much improved upon.

After the lens has been removed by extraction, solution, or displacement, the capsule may not roll up and contract out of the field of the pupil, in consequence either of the loss of its elasticity from thickening, from not having been sufficiently divided, or, because it is more or less adherent to the iris from inflammation; so far it is, surgically speaking, a secondary affection, and requires certain treatment to be directed specially to it. Till within a very recent date, a safe and effectual operation was a great desideratum. An eye requiring this after-operation was, if treated at all, submitted to attempts, generally ineffectual, at tearing or depressing the capsule, for the complicated mode of extraction then in use was fraught with such danger to the organ, that few surgeons undertook it, and the process of boring an aperture in the capsule with a needle is most uncertain. With the improvement in our instruments the great difficulty has been overcome; with the canula capsule forceps we are enabled to execute an operation which, while efficient, possesses the very peculiar advantages of being applicable to an eye that may have been already severely tried by previous operative proceedings, and of being unattended with the risk of collapse from opening the cornea when there is a degenerated state of the vitreous humour. We can now, in most instances, seize the capsule and withdraw it through an aperture only just sufficient for its transit, yet scarcely large enough to allow of the escape of the vitreous humour, or prolapse of the iris.

The opaque capsule is nearly always so disposed, that the sharp forceps alone will suffice for its extraction, no other instrument being required. Circumstances, however, may call for the employment of the blunt pair, as, for instance, when an unusually large aperture is required, for the extraction of an entire capsule that has become thickened, or cretaceous, or a very large portion of one so altered, in either of which cases the incision made by the sharp ones will be inadequate; or when a pupil that is diminished from any cause so restricts the space in which the forceps are to play, that the employment of a sharp pair would be dangerous. Under these conditions, the cornea must be opened to the required extent with an iris or cataract knife, and the blunt forceps applied; here, too, the cross-spring forceps may be of essential service. On some occasions, both kinds of forceps may be used; the blunt ones, when more than one attempt is requisite to clear the pupil. After the aqueous humour has escaped, the sharp ones ought not to be applied, lest serious injury be inflicted.

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The only obstacle I know of to the use of the forceps for extracting capsule, is extreme narrowness of the anterior chamber from adhesion of the iris to the cornea, which is usually conjoined with such close adaptation of these parts, as to prevent the instrument being used except directly in front of the contracted pupil, where opacity of the cornea, which is so likely to ensue on a puncture from any large instrument, would be fatal to vision. Other attempts therefore must be made to dispose of the capsule; or other methods resorted to for restoring sight—artificial pupil for instance.

The chapter on *Malignant Affections of the Eye* includes all that is known on the subject, and concludes with an estimate of the value of surgical operations in such cases. All operative interference is discountenanced in encephaloid disease of the eye-ball, particularly in children, and scarcely less so in schirrus; and it is only allowed in epithelial cancer or melanosis when the disease has not proceeded to protrusion and ulceration, and when the lymphatics and internal viscera are free. The same remarks apply also to cancerous disease of the lids.

The remarks upon *artificial pupil* are the last to which we can call attention. In these the conditions under which an operation may be undertaken and those which contraindicate it, the relative advantages of the several positions in the iris for an artificial pupil, the classification of the principal morbid states of the eye requiring such interference, with an indication of the most appropriate operations for each state, are all handled with great clearness, and many points of practical importance are illustrated by striking cases.

The admissibility of making an artificial pupil when one eye is sound, or at least affords sufficient sight for the ordinary purposes of life, has been much discussed, and different conclusions have been arrived at. My own opinion is against operating, as a rule, so long as one eye is efficient, for in all probability the vision that may be restored to the faulty eye will not be equal to that of the other, which will continue to be used alone. A more forcible objection however is, that as a new pupil cannot be made to correspond to the natural one, there will most probably be confusion of sight, double vision, or squint. Why a dissimilarity in the pupils should not always be followed by disturbance of vision, I am not able to say; I only know the fact, that under apparently the same circumstances, when the pupils disagree, sometimes there will be this derangement, sometimes not any.

The only exception that I know of to the above rule is, when the pupil is merely a little deranged by a small part of its edge being adherent to the cornea in consequence of a wound, or a penetrating ulcer, and when the adhesion may be readily detached. In such cases the pupil may be advantageously re-established; I am informed by Mr. Browne, of Belfast, that in four instances of defective pupil from the latter cause, one eye being quite sound, he operated with the effect of very nearly restoring the pupils to their natural state, and considerably adding to his patients' powers of vision. Desmarres states that the parallelism of the optic axes of the sound eye and the one with an artificial pupil may be preserved, by forming the pupil at the inner side of the eye, provided that the natural pupil is rendered useless by opacity of the cornea, or only partially destroyed by adhesion of the iris to the cornea or to the capsule of the lens, and that the internal portion of the cornea remains transparent. I shall point out, as I proceed, the great imperfection of a pupil made at the margin of the cornea.

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That a central position for an artificial pupil is superior to a lateral one is most obvious, and is indicated by the natural arrangement of the eye, and the configuration of the cornea, the lens, the vitreous body, and even the retina, the most sensitive part of which is opposite the pupil. This has no doubt been recognised ever since the general introduction of the operation for artificial pupil; though perhaps, it has not always been acted upon. The imperfections of a lateral aperture, arising from the interception of the light by the intervention of the ciliary processes, have been long pointed out, especially by Scarpa; the indistinctness of the image formed by the circumference of the lens, and the disadvantage of its falling on a part of the retina not the most sensitive, are facts which the elements of physiology teach us, and the details of practice confirm. As a natural effort to obviate these defects, when the pupil is external, the eye generally squints inwards. It has often been a matter of surprise to me how slightly vision has been interfered with by central opacities of the cornea, so long as the pupil was natural, and its margin extended a little beyond the opaque part; and also, where there has been general, although slight, loss of corneal transparency, with a perfect state of pupil. As a rule, therefore, I have ever preferred forming a pupil centrally, even though it should be by the side of a dense opacity of the cornea, or be somewhat shaded, to choosing the circumference of the iris, though there the cornea may be transparent.

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Respecting the position of the pupil when it cannot be made centrally, my own opinion is in favour of a pupil at the inferior margin of the iris, as I think that position possesses the greatest advantages, and it is that which I should adopt whenever the prominence of the eye allowed of its easy execution; but where retraction of the globe, or a prominent cheek, at all interfered with the ready use of instruments, I would make it downwards and outwards.

When circumstances oblige us to place the pupil laterally, we should endeavour, if opacity of the cornea do not interfere, to make it ample enough, without extending the aperture to the very margin of the iris, for the reasons above stated.

It is well to have some principle by which we may regulate the size of an artificial pupil, when the physical peculiarities of the case do not limit its dimensions. The multiplicity of the conditions to be taken into account, especially when the crystalline lens has been lost, renders it difficult to solve the problem on merely theoretical grounds, and experience must be our guide. When the aperture is to be central, we should endeavour to make it of a size corresponding to the pupil in a state between dilatation and contraction; in the middle of the iris, however, although all pupillary movements are necessarily lost, size seems of less importance than when the aperture is lateral, for then, except it be of a certain size, sufficient light will not enter, and if very large, too much will be admitted, and confusion of vision must ensue.

2. *Mr. Bishop on the Pathology and Treatment of Deformities.**— The object of this admirable and important work, which if we mistake not will do much to revolutionise the subject of which it treats, is "to trace to their sources the failure of the various methods in use, —to expose the empirical state of the practice both abroad and at home,—and to lay down some rules founded on established premises as guides for future treatment." The author's aim, we are told, is

* Researches into the Pathology and Treatment of Deformities of the Human Body, by J. Bishop, F.R.S., &c. Highley and Son, 1852, pp. 266, 8vo.

"not to propose any new machinery, either for stretching, pulling, pushing, or propping the body; but to dispel the illusion that such machines possess any value, by demonstrating their inefficiency in the majority of cases, and thus to pave the way for a more scientific and rational practice in this branch of surgery," p. 264. The author's aim, indeed, is to supplant the surgical-instrument-maker by the scientific surgeon.

After having minutely entered into the questions of the chemical and physical constitution, and the mechanical strength of bone, in states of health and disease, the author gives an elaborate description of the mechanism of the spine considered as an elastic column, and of the movements of which its various parts are susceptible, explaining satisfactorily an error into which Rollin and Majendie have fallen in ascribing a greatly increased amount of strength to its triple curvature, and correcting several points as to the flexibility of its different parts, as laid down by Messrs. Skey and Harrison. The effects of equal and unequal pressures on the intervertebral substances are thus ably spoken upon—

When the trunk has been kept in the erect posture during the day, an adult man, of middle stature, loses about one inch of his height, which he does not regain until after having remained some hours in a recumbent position. Six or eight hours will accomplish this effect, according to ordinary observation; but how much less time will suffice, has not, at least to my knowledge, been accurately ascertained. As the united thickness of the intervertebral substances in an adult man is about 3·875 inches, it must lose nearly one fourth during the day, and regain it during the night; and if each intervertebral cartilage gained or lost an equal portion, the variation in each would be equivalent to $\frac{3{\cdot}875}{23} = 0{\cdot}168$ of an inch.

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It has been shown that the normal curves of the vertebral column are due to the unequal heights of the vertebræ and cartilages, and, consequently, every abnormal state of the figure of the spine must result from some change in one or both of these parts. Owing to the special adaptation of the figure, and disposition of the articulating surfaces of the bodies of the vertebræ to those of the intervertebral cartilages, the latter are compressed equally in the erect position only, and it is in that position only that they can sustain the greatest amount of pressure, because the entire force is then distributed over their whole surface, and each part of the cartilage sustains its proper share of the load; but in every other attitude of the trunk the cartilages are unequally compressed. For example: when any two vertebræ move freely on each other in any direction, forwards, backwards, or laterally, the articulating surfaces of the bodies of the vertebræ, on that side to which the trunk inclines, approach each other, whilst those on the opposite side recede from each other. Hence it is obvious that, whenever the spine is curved in any one direction, some portion of the intervertebral substance bears a larger proportion of the whole compressing force of the superincumbent organs than the rest; and, if such unequal distribution of the force be long maintained, it must tend to derange the functions. We have seen that when the intervertebral cartilages have been subjected to continued pressure, they do not instantaneously recover their primitive condition. From this it may readily be inferred that, if the surface of the cartilage has been unequally acted on by a force applied day after day for some time, it will become so much compressed in one part, and expanded in the opposite, as to assume a new figure,

adapted to the abnormal attitude which gave rise to its unequal compression. In fact, it becomes diseased by the influence of simple mechanical compression, independently of other causes. The intervertebral cartilages having thus been made to assume a new figure, occasion deformity of the spine, and are indeed, in all probability, the usual seat of lateral distortion, when it is merely of a mechanical character.

Our author enters an unqualified protest against the practice of myotomy and tenotomy; and as far as regards the practice of myotomy for the relief of spinal curvature, and of either for the relief of affections dependent on an abnormal condition of the nervous system, we entirely agree with him; but with regard to a very large and important class of cases, namely those of congenital talipes we must be permitted to take some exception.

The author enters largely into the conditions of statical equilibrium of the body, and in so doing employs D'Alembert's principle of the equilibrium of impressed and effective forces. He also investigates with great ability the effects of weight on the attitudes of the body, the effects of the wooden leg and crutch, of ankylosis of the hip and knee joints, of unequal length of legs, of rowing, of lying in unfavorable positions, of sitting, and so on. In this part of the treatise we find the following new and important remarks upon the elasticity of ligamentous tissue—

I had long since been of opinion, that the white fibrous tissues, such as the ligaments, are elastic, from a consideration of their structure and office. In order to satisfy myself on this point, I have lately made several experiments on the ligaments of the joints in the lower animals, and found them to possess a very high degree of elasticity, but a very limited account of extensibility. It was probably the latter circumstance that gave rise to the hypothesis of their being inelastic; but if we admit that the ligaments are, however slightly, extensible, it follows that they must also be *elastic;* for otherwise, the application of every force sufficient to stretch them would leave them elongated; and by continued elongation, the whole of the joints in the skeleton would in the course of time become loosened, and finally dislocated, which is contrary to experience. I believe this to be the first time that this property of the ligaments has been noticed, for in the latest physiological works they are stated to be inelastic.

Upon the origin of club-foot the author observes—

In the early stage of club-foot, we have to deal, in many cases, with malformation of the tarsal bones, and an abnormal contraction of muscles; but in cases of long standing we may have malposition complicated with malformation. In confirmation of this statement, there are, in addition to the researches of the authors already mentioned who have written on the morbid anatomy of club-foot, many preparations in the various museums of Europe.

. . . . . And again: When distortions of the foot arise from congenital malformations of the bones, it is obvious that the treatment, although it may often be of great service, can only be palliative. Long-continued use of the feet in certain positions will, moreover, so materially alter the figure of tarsal bones originally well formed, as to render the case equally intractable with those of congenital malformation.

The very practical observations on the pathology of caries, cancer

of the bones, and endochroma, deserve the serious attention of all practical men, as do also the observations on rickets.

The author duly exposes the inefficiency of the *stretching systems* in the treatment of spinal curvature, and then proceeds to make the following excellent remarks on the *supporting systems* :—

Perhaps no apparatus has been so extensively applied to the framework of the human figure, especially in the female sex, and has produced such mischievous results, as corsets or stays; and notwithstanding all that has been urged against their use by medical men, there is not one woman out of a thousand who is not daily encased in one of these machines.

An idea must surely prevail, that from an early period, the human body is not a self-supporting machine, and is therefore in this respect inferior to the lower animals; whereas, in truth, the greater the freedom of muscular movement, the greater is the normal strength and power of the muscles to keep the body erect. But let us inquire into the actual effect of stays, especially when applied to growing persons between the periods of youth and adolescence; and let us take for example a young girl of from four to fourteen years of age. Up to the first period the parents usually allow the muscles to perform their natural office of controlling the attitudes, and of preserving the equilibrium of the body about its centre of gravity. This power is only attained during the period of infancy after long practice, attended with numerous falls and bruises. When the child has acquired a perfect control over the various attitudes which the body commonly assumes in youth, when the muscles have been accustomed to freedom of motion, and when the erect position is maintained with perfect ease, then the parents usually encase the body in some kind of corset, which restrains the movements of the back within narrower limits than those to which it had been accustomed; the muscles are at the same time curtailed of their natural action, and lose a portion of their power, becoming less able to support the trunk steadily. In a short time after the application of the stays, the wearer feels unable to maintain the erect position comfortably without them; and after the lapse of a still greater period, by habitual use, these unnatural appendages to the human figure become apparently, though not really, as necessary to the individual as is the natural carapax to the tortoise. The injurious effects of corsets, however, are not confined to their debilitating influence on those muscles which serve to keep the trunk erect; they extend to several other very important functions of the body. It is well known that the framework of the thorax is composed of an assemblage of bones and cartilages, which are articulated to each other in such a manner as to allow, during the respiratory processes, of very peculiar movements essential to a healthy state of the body. One of these movements —namely, that of inspiration—increases the horizontal section of the thorax; but since stays are usually composed of unyielding materials, the full expansion of the chest, and its normal and automatic movements, are impeded. When the stays are laced tightly round the body, under the erroneous idea of improving the figure, the natural areas of the thorax and abdomen are diminished, the viscera displaced, and the great vital functions of respiration, circulation, and digestion deranged.

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The hypothesis which prevails amongst mothers seems to be, that the more nearly the body is separated into two portions at the waist, the greater is the approach to perfection of figure; and this mischievous idea is extensively brought to bear upon their daughters, not only at the expense of their normal figure and the real outlines of beauty, but to the permanent loss of health and strength.

In treating of the effects of position in the treatment of spinal curvature the *prone* position is unreservedly condemned, that position, that is to say, in which the patient is laid on the face upon a double inclined plane, so that the weight of the trunk is supported on the thorax and abdomen. The facilities for making topical applications, which constitute the chief advantages of the position, do not compensate for the troubles in the respiratory, digestive, and circulatory functions which are caused by pressure upon the trunk and abdomen. The author, however, thinks that no one position ought to be persevered in for any length of time, and that with proper care the position may be changed without detriment.

A great deal of discussion has arisen as to whether patients requiring a recumbent posture should be kept continually in a supine or a prone position. It has been already stated, that no person can be kept in any one posture for a long time, without detriment to the general health; and that organic lesions of the soft parts on which the body rests are thereby induced. As these are well-known facts, it becomes a matter of very serious importance to decide in what cases of distortion the recumbent posture is advisable—whether the supine or the prone position is preferable—and whether it is necessary that patients should be kept constantly in one or other of these positions. In inflammatory states of the intervertebral substance, and in caries of the vertebræ, which always require that the parts affected should be relieved from superincumbent pressure, and kept in a state of rest, there can be no doubt that the recumbent posture is necessary. The tendency of nearly all invalids, when confined to their beds by aggravated sickness, is to lie in the supine posture; and this they do spontaneously when the disease is of such a nature as to render it indifferent to the practitioner what kind of posture the patient may be inclined for ease and convenience to choose. Whatever may be the immediate pathological cause of invalids thus assuming the supine position, the fact of their doing so shows, that it must be the most agreeable one; but although the form and structure of the posterior surface of the body render it best adapted for reclining on, this posture cannot be permanently maintained without injury to the integuments. The position is, besides, objectionable, because it prevents access to the parts which may require topical applications, such as liniments, frictions, blisters, setons, issues, leeches, &c. This objection holds good as long as the patient is not allowed to turn on his side; but as this might be done without injuriously disturbing the affected parts, the supine position could be resumed when desirable, and the patient placed on the side when necessary. The advantages of adopting a recumbent position, and occasionally changing it from the back to the side, in organic diseases of the vertebræ, has been experienced by the author in so many cases as to justify his giving to the supine the preference over the prone posture. The result of a number of observations, without entering into details, is this—namely, that in cases of curvatures of the spine arising from disease and absorption of the bone, the distortions do not increase while the body is kept in horizontal supine, and lateral positions; but they do increase when the body is allowed to move and be erect; and that, moreover, when patients are confined to the prone position, so far as the author's experience goes, the curve of the spine is progressive, for which there are obvious mechanical reasons. For instance, in all cases, both of diseased bone and curvature, the superincumbent pressure cannot be wholly withdrawn in any oblique position; and where the curvature is in a plane or planes intermediate between the mesial and transverse, as generally happens, the deformity may

often be increased by the tendency of the unsupported curved position towards the transverse plane. . . . . Again:—In cases of ordinary lateral curvature arising from unequal pressure on the vertebræ and intervertebral cartilages, no good beyond that of taking off the superincumbent weight can be expected to arise from the recumbent posture; but to restore these organs to their normal condition will require something more than their being merely relieved from the general pressure, especially if the complaint has been of some standing, and the bones and cartilages have acquired an altered figure. It is from this circumstance that surgeons are disappointed, when, after having laid a patient in a reclining position for many months, nay, sometimes years, they find, to their great mortification and chagrin, that the moment the erect position is attempted to be resumed, the curvature reappears as before: in fact, it could not be otherwise, inasmuch as distortion, arising from a certain amount of mechanical force, must be counteracted, if it ever can be counteracted, by at least some amount of force applied in an opposite direction, and this the recumbent position alone is not calculated to effect. It can only be done on the same principles of equilibrium, and of the effect of extraneous forces on the body, which have already been stated. The nature of the distortion must be clearly made out before any therapeutic agents are employed; and it is not difficult to form a tolerably correct diagnosis of these cases. It is manifest, from the preceding considerations, that lateral curvature of the kind above mentioned should not be treated by laying the patient for lengthened periods in the recumbent posture. In the first stages, when no abnormal change has taken place in the bones and cartilages, and a tendency is perceived in the young and delicate to assume a position prejudicial to the figure, accompanied with a sense of weariness after standing and walking, the patient should resort to a recumbent position, and lie on a firm mattrass or couch for some time every day, according to circumstances, as long as may be required; not with a view of curing the lateral curvature of the spine, but in order to rest the body, so that the patient may not be induced to assume the attitudes which produce this form of distortion when standing. When the spine is affected with caries of the bodies of the vertebræ, the recumbent posture is indispensable, and no machinery adapted to prop, push, or stretch the body that has ever been invented will be efficacious in the treatment of these cases. When the patients are laid in a recumbent posture on the first appearance of organic mischief, the amount of distortion is greatly diminished. Much depends on the care and manner in which this reclining is carried out; the more nearly the body lies in the horizontal plane the better, for important reasons. When the head-piece of a triple-inclined plane is raised to an angle scarcely sufficient to allow the patients to see horizontally, they have a constant tendency to raise the head above the plane, by which means the bodies of the affected bones are irritated and pressed on; if, therefore, this tendency is observed, it will be necessary either to lay the patient perfectly flat, or to confine the head to the plane, according to circumstances. The nearer to a horizontal posture the trunk is laid in, the less, owing to the direction of the great dorsal curve, will be the pressure on the bodies of the dorsal vertebræ; and if the mischief is in the lumbar region, it will be necessary to adapt a support to the lumbar curve. The same may be observed when the disease affects the cervical vertebræ; indeed, a person conversant with the figure and mechanism of the spine may easily release any portion from injurious pressure, by adapting the surface of the couch to the circumstances of the case, without having recourse to the barbarous stretching machine of the English and French schools. This end may be accomplished by considering the spine as a bent lever, and causing it to rest on a point, as

a fulcrum, opposite the parts requiring relief; the weight of the body itself then acts at each end of the lever, and exerts a mechanical force quite sufficient to release from pressure the parts affected with organic disease.

Propping the spine and neglecting the legs are condemned as irrational, and the use of jointed leg irons is shown to be essential in many kinds of spinal curvature.

It is strange, that while nearly all surgeons admit the propriety of supporting the spine, so many of them should deny the use of supporting the legs—especially since the office of the latter is to support the whole body, and of the former, only a portion of it. When the legs bend, it is really because they are not able to bear the weight of the body. Not so with the spine, which is able to support itself, but which must conform its position to the condition of the legs. Therefore to prop the spine, which is curved by the state of the legs, is just as if a person who has the foundation of his house defective, which causes the superstructure to incline, should attempt to remedy the evil by propping the upper parts, and neglecting the repair of the foundation which is the seat of the mischief. An architect would be called insane, were he to adopt such means for such an end; yet this is precisely analogous to the plan of propping the spine, and neglecting those defective states or malpositions of the lower extremities which give rise to the greatest number of cases of lateral curvatures.

We must here close our remarks upon a work which we would strongly urge upon the attention of medical men, being well convinced that when its precepts are properly understood and carried out, many cases of deformity will be prevented, and many cases which now resist the knife and the machine will be cured without the knife and the machine.

3. *MM. Pravaz and Deslongchamps on the Treatment of Aneurism by Injections of a Solution of Perchloride of Iron.**—M. Pravaz, of Lyons, proposes to coagulate the blood in aneurismal sacs by injecting into it a few drops of a highly-concentrated solution of perchloride of iron. In order to this he employs an extremely delicate and needle-like trocar, and a syringe, the piston of which has a rack and pinion movement; he then cuts off the blood to be operated upon by pressure above and below the point where the puncture is made, and, having introduced the trocar obliquely, and adapted the syringe to the canula, he proceeds to inject, drop by drop and without impulse, the solution of the perchloride, the syringe being so arranged that each turn of the pinion propels two drops of the solution. M. Pravaz bases his proposal upon the following experiments:

*Exp.* 1. The carotid of a sheep was exposed, and pressure made upon two points so as to cut off about a table-spoonful of blood from the rest of the circulation. Into this blood three or four drops of the perchloride solution were injected; and in four minutes a clot had formed which completely plugged the vessel, and effectually withstood the cardiac impulse, and which continued to do so as long as the animal was allowed to live, namely for eight days.

* Schmidt's Jahrb., Bd. 78, No. 4, p. 71.

*Exp.* 2. The carotid of a horse was subjected to a similar treatment. Eight drops of the solution were injected, and in four minutes a similar firm and resisting clot had formed. A quarter of an hour later this vessel was removed and examined, when it was found that the lining membrane corresponding to the clot had lost its shining character, and assumed a granular, longitudinally-striated appearance.

*Exp.* 3. Another horse was treated in the same manner, and with the same results so far as the coagulation of the blood was concerned, but eight days were allowed to elapse before the vessel was examined. In this case the artery was found to be obliterated by three distinct clots,—the middle one firm, dark, and granular, the immediate result of the operation; the others like ordinary clots, and apparently of secondary formation.

Since this time, the suggestion of M. Pravaz has been successfully carried into effect by M. Raoul Deslongchamps in a case of aneurism of the sub-orbital artery, which had previously resisted the treatment by compression. Some inflammatory symptoms followed the injection, but these readily yielded to antiphlogistic treatment. This case was first brought before the Surgical Society of Paris by the author, and subsequently before the Medical Society of London by Mr. Gay.

4. *Mr. Lizars on the New Mode of Operating in Varicose Aneurism.*—In our last volume (XVI, p. 342,) we described an operation for varicose aneurism by M. Malgaigne, in which the artery was tied above and below the sac, by two separate incisions, without interfering with the sac, or the integuments lying over it,—an operation which, as M. Malgaigne subsequently discovered, had been performed by Dr. Norris, of Philadelphia, in 1842. We now recur to the subject for the purpose of showing that both these gentlemen were anticipated, at least in the spirit of the operation, by Mr. Lizars, of Edinburgh. Mr. Lizars' operation, however, differs from M. Malgaigne's in the exposure of the sac by a single incision and the subsequent free dissection of that sac—a difference which the author considers of considerable moment, as enabling him to secure any anastomotic communication with the sac between the ligatures, and so to prevent a cause of failure which did actually occur and operate in Dr. Norris' patient. Mr. Lizars' case is narrated, and illustrated with cuts, in the first part of the first edition of his work on Practical Surgery, which edition was published in 1838, and it is alluded to by Mr. Ferguson, as one at which he had himself assisted, at p. 279 of his 'Practical Surgery.' The case itself occurred several years prior to publication.

5. *Dr. Chalmers and others on the Treatment of Snake-Bites by Stimulants.**—The following cases appear to indicate the extreme desirableness of having brandy or some other powerful stimulant within reach whenever there is danger from snakes, whether this be

* Glasgow Medical Journal, April, 1853, p. 102. Case of Cobra-bite, by Dr. Chalmers, lately of H. E. I. C.

in a zoological garden or in a jungle. They teach a lesson which should be promptly and properly instilled into the minds of persons who are in the situation, and who might be in the plight of poor Gurling:—

1. "On 25th June, 1819, at 11 p.m.," writes Dr. Chalmers, "I heard from the outside of my house, at Barrackpore, near Calcutta, a loud call for my immediate assistance. It proved to be from Colonel, afterwards General Sir Wm. Lumley, whom I found with a lanthorn in his hand, entreating me for God's sake to come with him at once, as his *mehturanee* (female sweeper) had been bitten by a cobra de capello. I took in my hand a phial of solution of ammonia, of the usual strength, a case of scalpels, and a large sized elastic gum male catheter. On arriving at the hut occupied by the poor woman and her husband, I found her stretched outside on the ground, her head resting on her husband's knee. Her body was cold and collapsed, there was neither breathing nor pulse, her eyes were wide open and insensible to light, the mouth was also wide open, tongue cold; in fact life was, to all appearance, extinct. How long she had lain in this position could not be ascertained; her husband conjectured an hour at least. On the back of the right hand were discovered two punctures, as if made by a needle, about an inch and a half apart, marking the entrance of the poisonous fangs of the snake. Upon each puncture there was a drop of nearly colourless fluid, without any hæmorrhage, tumefaction, or ecchymosis.

Here was a case sufficiently discouraging, if not, to all human appearance, hopeless. However, I resolved not to abandon the poor sufferer, while the kind-hearted master entreated me to do what I could.

Ordering bricks to be heated for application to the præcordia and the feet, the first step of the treatment was to pour down her throat a teaspoonful of the ammonia, with as much water, but all power of deglutition being lost, some difficulty was experienced in accomplishing my object. By the aid, however, of the catheter as an œsophagus tube I succeeded admirably. The next step was to cut out and pare off the integuments and subjacent cellular and muscular tissues, extending my incision about one fourth of an inch beyond the punctures. From the large wound, which was of an oval shape, not a drop of blood escaped in this operation. The husband was now directed to apply his mouth to the wound, and suck with all his powers, which he proceeded to do most readily, the natives having great faith in such a measure. This he continued with all the energy he was capable of, for fully half an hour, without succeeding in procuring any moisture, while I repeated the ammonia steadily every ten minutes, till a full ounce was consumed. At length our perseverance was rewarded by some hopes of a restoration, for the poor distracted husband leaped up in an extacy of joy, exclaiming in his own language, "*Lohoo àtá sahib,*" (blood is coming, Sir), showing his tongue covered with the vital fluid. In a few minutes more the action of the heart was faintly perceptible; the pulse at the wrist was just traceable in a thready thrill; she moved her head, gave a deep sigh, and sat up. Thus our persevering efforts for nearly too hours, were rewarded by the rescue of a fine young healthy woman from certain death;—in truth her recovery might be considered, without any hyperbole, a resurrection from the dead. The only treatment pursued afterwards was the free cauterization of the wound by *Nitras Argenti*,—the application of a pledget of lint dipped in melted *Ceratum*

* Glasgow Medical Journal, April 1853, p. 102; case of Cobra-bite, by Dr. Chalmers, late of H. E. I. C.

*Resinæ*, covering the whole with a hot poultice. The wound healed kindly by granulation, and she was able to resume her duties in a few days.

2. "I had seen,"* writes H. S., "in a Madras paper a letter from a Bengal surgeon, in which he mentioned that the Ganges, on whose banks his regiment was stationed, had, in consequence of heavy rains, risen and deluged the adjoining land. The snakes had in consequence forsaken their hiding-places, and found their way into the Sepoys' huts. About twenty men were bitten and brought into hospital, with all the symptoms of suffering from a cobra's bite, apparently beyond hope. The surgeon gave to each hot brandy and water, with peppermint and laudanum; and he did not lose a man. At the time I speak of I was stationed at Bellary, and I was in the habit of keeping greyhounds, one of whom, about 9 o'clock at night, was bitten by a snake. The dog gave a cry of terror, and ran off. The night being dark, he was not to be found for some time—a quarter of an hour: he was cold, the limbs quite stiff, the eyes fixed and glassy, and not a pulsation could be found. As the animal was a valuable one, I was anxious to save his life, and had him brought into the house; and, remembering the surgeon's success, I lost no time in mixing a comfortable tumbler of brandy and water with the laudanum; the dog's mouth was forced open by straps, and a table-spoonful of the mixture given every ten minutes. For a very long time no change in the animal was perceived, but at length I thought a slight pulsation might be felt, which gave some hope of ultimate success; in short, at about 3 o'clock in the morning, the dog was able to stagger and be removed. As well as I remember, he must have taken two large tumblers of the mixture.

3. "*Wednesday, September 17th*, 1851.—This morning,"† writes Lieut. J. C. Woodruff, "Lieut. J. F. Parke, Topographical Engineers, U. S. Army, and I, were walking out to procure some specimens of birds, and when about two miles from the Pueblo, I came within a few inches of treading upon a rattlesnake, who immediately coiled himself up and got ready to strike; jumping back, I drew out my ramrod, and struck him over the back with sufficient force to break it. Being a fine specimen, I wished to preserve it without further injury, when, placing my gun upon its head, seizing it, as I thought, immediately at the back of the head, I picked him up, but unfortunately I had too long a hold, when he threw round his head and buried his fang in the side of the index finger of my left hand, about the middle of the first phalanx. The pain was intense, momentarily producing, as it were, a severe shock, and accompanied with much nausea. I immediately commenced sucking the wound, and at the same time got Lieut. Parke to apply a ligature round the finger to prevent the too rapid absorption of the poison. I then scarified it freely, and continued sucking until I returned to the camp.

"A man that was with us at the time I sent immediately back to get some aqua ammoniæ fort., and meet us on the road, which he did when we were about three-fourths of a mile from the town. I applied it immediately to the wound. Mr. Kern hearing what had happened, returned with him, and he wished me to try, as he said, the *Western Remedy*, that is to say, to get drunk. This I had often heard of, and I was determined to try its efficacy. He was supplied with a bottle of whiskey, which I immediately commenced drinking; by the time I arrived at the Pueblo, I had drank half a pint. Already the glands in my axilla were getting sore and painful. I then took some ammonia internally, and scarified my finger freely, holding it in a basin of warm water, which caused it to bleed freely; I then commenced drinking *brandy*,

* Lancet, Nov. 6, 1852; on the Treatment of Snake-bites, by H. S.

† American Journal of Medical Sciences, Jan. 1853; case of Snake-bites, by Lieut. J. C. Woodruff, U. S. Army.

and at the same time held my finger in a cup of ammonia. It took one quart of fourth-proof brandy and half a pint of whiskey (enough to have killed a man under ordinary circumstances), to produce intoxication, which only lasted about four hours. During my intoxication I vomited freely." Lieut. Woodruff afterwards proceeds to state that he got quite well eventually, but that his recovery was much retarded by inflammation in the axilla and by inflammation and necrosis in the bitten finger, which inflammation set in with great intensity on the evening of the accident.

6. *M. Nelaton on the Treatment of Syncope from the Inhalation of Chloroform by Inversion of the Body.**—M. Nelaton has tried this mode of treatment, (which carries its recommendation on its face,) on two occasions, once at the Hôpital St. Louis, and the second time at the Hôpital de la Faculté; and M. Denonvilliers has tried it once. In each case the face at once recovered its colour, the interrupted respiration re-established itself, and the patient escaped from imminent danger.

7. *M. Sperino on Syphilisation.*†—Since the publication of our last volume, M. Sperino has published a detailed account of 96 cases of syphilisation—53 of which were cases of primary syphilis, and 43 of constitutional syphilis. Of the cases of primary syphilis 50 are said to have been cured, 2 to have failed, and 1 to have not been treated by syphilisation simply. Of the cases of constitutional syphilis 26 were treated by syphilisation and 17 by syphilisation in conjunction with mercury or iodide of potassium; and of the 26, 25 are said to have been cured, and 1 to have failed. The process of treatment in the cases of constitutional syphilis was interrupted in three instances by intercurrent maladies, and in two of these instances death happened.

Constitutional symptoms were developed upon the primary symptoms in only 2 of the cases of primary disease, and these symptoms gave way under a perseverance in the syphilisation; but no relapse has yet taken place in any case. The duration of the *cure* in the 76 patients who were treated exclusively by syphilisation is 1 month in 1; 1 to 3 months in 4; 3 to 6 months in 7; 6 to 9 months in 8; 9 to 12 months in 8; 12 to 15 months in 21; 15 to 17 months in 27.

All these cases are said to have been bad cases, such as could not very well be supposed to undergo a rapid spontaneous cure, and the inoculations, which in many instances were very numerous, were in no instance followed by any serious consequences. Some inflammation about the earliest punctures, and once or twice some transitory phagedænic symptoms in the same parts, were the worst consequences, and these were not present in the later punctures. These particulars are gathered from a Review of M. Sperino's book in the Archives Générales de Médecine for March, 1853; but the book itself we have not seen.

Mr. Victor de Meric, the able editor of M. Ricord's Lectures on venereal diseases, has also taken up the subject of syphilisation at the Medical Society of London and in the 'Lancet,' and as a partizan of

* Dublin Medical Press, April 20, 1853.

† La Sifilizzatione Studiata qual Mezzo Curativo e Preservativo delle Malattie Veneree, da C. Sperino, in 8vo, de 903 pages, Janvier, 1853. Turin, chez H. Pons.

M. Ricord. Mr. de Meric, however, had not seen M. Sperino's book at the time of the publication of his papers.

8. *Mr. Gay on the Dangers of the Taxis.**—After a tabular abstract of the cases of hernia that were admitted into Guy's Hospital between September, 1841 and December, 1852, Mr. Gay proceeds to the following important remarks:

"From this table it will be seen that the taxis was employed in twenty-six cases of hernia, in which strangulation had existed for periods varying from two hours to seven days. In five of these cases the taxis is reported to have been successful, so far as reduction was concerned; whilst in the remaining twenty-one, it failed altogether of its purpose. In one of the five successful cases (38) strangulation had existed about twelve hours; the taxis (which had been employed by the patient himself) was again used; then a warm bath and an enema; and afterwards ice, which was kept applied apparently for two hours, when the parts were reduced "without difficulty." The man "had been labouring under some abdominal complaint for the previous fortnight." He died the following day; and the post-mortem inspection revealed the existence of general peritonitis, with considerable bloody and serous effusion into the abdominal cavity. Three feet of intestines were almost black, (the tumour on admission was "enormous" and "elongated.") The intestines, both large and small, contained a quantity of grumous blood, and their lining membrane was much congested and soft. The symptoms of this patient on admission were not severe; the tumour was "rather tense, but not tender," and he suffered from sickness, considerable pain, and general distress. There can be little doubt but that in this case the taxis proved worse than abortive—that, in fact, it caused those lesions which terminated the patient's life; and, moreover, that if the stricture had been relieved by operation as soon as symptoms of strangulation showed themselves, the life would have been saved. In case 39, a portion of the contents of the sac, probably the intestinal, was reduced by the first manual effort; the patient obtained relief, but the whole was not returned until after the expiration of eight days. The case was not severe at first, but to the taxis certainly belongs the credit of its reduction. In the third case (41) the patient had been operated upon five months before. On this occasion the tumour became rather large, tense, and moderately tender; the constriction at its neck being very tight. The taxis was first employed, then the warm bath with calomel and opium, and subsequently ice. The contents of the sac were returned without much difficulty, when the opening of the ring was found to present an oblong slit, with hard, unyielding edges. In all probability this state of the ring, the result of the former operation, furthered the good offices of the taxis in this case. In case 43 the symptoms were moderately severe, and after the application of ice for the space of two hours the taxis proved successful.

"In the fifth case (44) the symptoms of which were moderately severe, an enema was given, and ice applied to the tumour, after which reduction was effected by taxis. Four cases only could be said

* Contributtons to the Surgery of Rupture, by Mr. Gay. Lancet, Nov. 20, 1852.

to have had a favorable termination, and in one of these it might be questioned whether this result was not in great measure attributable to the accidental and peculiar condition of the ring at the time the taxis was employed.

"In twenty-one instances the taxis failed altogether, although it was, with a few exceptions, undertaken by most competent surgeons; in cases of, for the most part, moderate severity; and persisted in with judiciously ordered intermissions, for periods varying from two hours and a half to twenty-nine hours. In eighteen the stricture was ultimately divided; but of these nine died, and the inspection discovered in each those irreparable lesions which are well known to be occasioned by violence or protracted strangulation, or by both causes combined. There were no grounds for suspecting in any one case that the operation itself had the slightest share in bringing about the fatal result; but much reason for thinking that the lives of most of these patients would have been saved had the operation been substituted for the first manual efforts at reduction. In those cases in which recovery followed the operation, the periods of time allotted to the trial of desultory measures varied from two hours and a half to (in one case) seventeen hours, clearly showing that the success of the operation was, to a certain degree, associated with its comparatively early adoption.

"It is evident, then, that but little confidence can be placed in the best efforts at manual reduction of the parts in cases of strangled hernia, apart from division of the stricture; whilst, on the other hand, the evil effects of the force used, as well as of the protracted constriction which its employment necessarily occasions, give rise to an amount of fatality that fearfully counterbalances the presumed advantages of its being occasionally successful. The truth and importance of these observations are well attested by the following extract from Mr. Hancock's interesting and able work on hernia:—

"Between the years 1834 and 1839, M. Boyer never operated until he had made prolonged attempts at reduction, and during that period nine cases were operated upon, of which eight died and one recovered. From 1839 to 1843 he employed the taxis to a much more limited extent. Seven cases were submitted to operation, of which four died and three recovered. From 1843 to 1846 he had almost entirely abandoned the use of the taxis; and out of fourteen cases upon which he operated, four died and ten recovered. Mr. Manee, on the contrary, during the same period, almost always proceeded to operation without employing the taxis. *Out of twenty-eight cases operated upon, two died and twenty-six recovered.*" (p. 65.)

But the results of the taxis are often disastrously fallacious, as Mr. Cock, Mr. Teale, and others, have, in common with myself, observed. Not only has the sac with its strangled contents been together returned within the abdominal or pelvic boundaries, but it has frequently happened that a portion of the fluid contents of the sac, or of the intestine, has been forced back beyond the seat of stricture; the patient has been relieved, and the surgeon has been led to entertain a hope that the urgency of the case is at an end. A few hours, perhaps a night, have been allowed to pass, the symptoms have recurred with greater severity than ever, and, despite of the release of the parts by

operation, the life has been lost. What then should be the rule of practice? Clearly, that in cases of strangled hernia the parts should be freed without the least possible delay; and by the use of those means which give the greatest promise of success. Is a trial of the taxis justifiable in any cases? 1st, clearly not in those in which, however recently the contents of the sac might have become strangled, symptoms of constitutional disturbance have developed themselves; 2d, neither in those in which, from the existence of local pain or tension, we infer the encroachment of those lesions which, if unchecked, must prove fatal, and that possibly in the shortest space of time; 3d, nor in those cases in which strangulation has been protracted beyond a few hours, seeing that of all the circumstances that are known to compromise the safety of the patient, none is more insidious, more replete with peril, than delay.

From the table adduced, which certainly places the taxis in the most favorable light, as well as from my own and the concurrent testimony of those who have seen much hernial practice, I confess myself indisposed to place any reliance upon it in a case of strangled hernia, especially whilst I am prepared with a surer remedy, being persuaded that that surgeon will save most lives who trusts to the division of the stricture, and to that alone. If the taxis be tried at all, it should be tried on cases exceptional to those I have just classified, whilst the patient is under the influence of chloroform, and after both the patient and friends have been warned of the nature of the case, and of the course it is necessary to pursue, so that in the event of its failure the operation may at once be proceeded with. Moreover, this trial should be limited to the most gentle pressure, continued but for a very few minutes, and concentrated towards the axis of the ring. The ordinary adjuvants of the taxis are unequal, in point of efficacy, to chloroform vapour, and would thus be dispensed with, together with the mischievous delay that their trial occasions.

9.—*Mr. Wade on Stricture of the Urethra.**—In this work Mr. Wade has given a comprehensive account of stricture in all its forms and complications, and has added his own very extended experience to the former store. He has entered into all the questions connected with the subject, but most fully into what he considers, and what he proves to be, "a safe and efficient mode of treating the more intractable forms of stricture," namely, the treatment by potassa fusa. Mr. Wade's views upon this last question are indeed of great importance, and we gladly lend our aid towards making them more fully known.

From the result of no inconsiderable experience of the use of potassa fusa in many intractable forms of urethral obstruction which had resisted the ordinary means of treatment, nitrate of silver included, I am convinced that the excellent effects of the former caustic are but little known to the generality of surgeons. It was the inefficient, unsatisfactory action of nitrate of silver in old hard strictures, particularly such as were impermeable and of

* Stricture of the Urethra; its Complications, Effects, &c., with a safe and efficient mode of treating its more intractable forms, by Robert Wade, F.R.C.S., Surgeon to the Westminster General Dispensary. Churchill, 8vo, 1853.

considerable extent, that first induced me to give the caustic potash a trial. I very soon became convinced of its superiority to nitrate of silver in such cases, having found that more good might be effected in the majority of gristly strictures by one application of potassa fusa than by several of nitrate of silver. I found also that, to be effective in these cases, it was necessary to employ the caustic more freely than was recommended by Mr. Whately, and that this might be done with perfect safety.

This caustic, when properly applied to strictures of the urethra, causes a sensation of heat, not commonly of a painful description, except in such as are irritable, and then the pain is of short duration. The property possessed by potassa fusa of combining with oily substances and animal mucus, forming a saponaceous compound, modifies its action, and enables it to penetrate the hardened tissue of a stricture, to soften, and promote its absorption more effectually than the nitrate of silver.

To observe the action of potassa fusa I have occasionally applied it in the same manner as in stricture to hard spots on the tongue, caused by slight thickening of its mucous and submucous tissues. The part in immediate contact with the potash quickly changes to a deep brown, surrounded by a small red circle, and a little bloody serum oozes out. For two or three days afterwards the surface has a whitish appearance, and, at the end of a week or less, usually looks quite healthy.

Potassa fusa appears to me to act beneficially upon strictures, by relieving irritability and inflammation; by promoting absorption and stimulating the congested vessels to contraction; by its dissolvent powers.

The caustic potash may be advantageously applied to strictures for two purposes:—one to allay irritation, the other to destroy the thickened tissue which forms the obstruction. When used in the minute quantity employed by Mr. Whately, I believe its action to be simply that of allaying irritation, as, when mixed with lard and oil, combined with the mucus of the urethra, it can scarcely have any effect beyond a mild solution of caustic, which most probably causes a more healthy state of the lining membrane of the stricture. Before using the potash, a bougie should be passed down to the stricture, that its distance from the orifice of the urethra may be correctly ascertained. A small piece of the caustic, about the size of a common pin's head to commence with, should be inserted into a hole made in the point of a soft bougie. The caustic should be broken just before it is required, and the inner or dark part selected, as the outer portion is usually less efficient, being commonly converted into a whitish crust of carbonate of potash. Two notches should be made in the armed bougie, as directed by Mr. Whately; one, marking the exact distance of the stricture; the other, an inch beyond; so that its progress, as it enters the obstruction, may be accurately observed. The bougie should be moulded with the finger round the potassa fusa, so that it may be securely fixed; but, to insure the action of the caustic, instead of being below the level of the hole in the instrument, as recommended by Mr. Whately, its points should be fairly exposed to enable it to act upon the stricture.

I have been particular in these directions from a conviction of their necessity; for if Mr. Whately's injunctions regarding the method of using the potassa fusa be literally followed, and his exceedingly minute quantities of caustic be inserted below the level of the pole in the bougie with a covering of lard, I well know there can be no efficient action of the remedy upon the stricture, a fact of which any one may soon convince himself. It is evident that Mr. Whately, from his over-anxiety to prevent the abuse of this valuable caustic, has given such precautions for its employment, that if strictly obeyed, must render the remedy of little value.

The armed bougie should, of course, be well oiled before its introduction, and if the points of the caustic are well covered with lard, there need be no fear of its acting before it reaches the stricture. The bougie should be gently pressed against the stricture for a minute or two if impermeable, and then withdrawn. When the caustic is applied to permeable obstructions, the bougie should be passed three or four times over the whole surface of the stricture. To impermeable strictures the caustic should be applied with more caution than to such as are permeable, for should retention of urine occur, it will be more easily relieved in the latter than in the former. It usually happens that after one or two applications of the caustic, the bougie will be found to enter the obstruction.

Before applying potassa fusa to impermeable strictures, every precaution should be taken to guard against irritation. If convenient, the application may be made at bed time, taking care that the patient passes his urine just before; and, should he have been subject to rigors or retention, it will be best to administer an opiate injection an hour previous to the operation. Many surgeons appear to have been afraid of using potassa fusa in stricture, from its so readily liquefying when exposed to the air, having on that ground principally preferred the argentum nitratum. Such fears are, however, groundless; for, contrary to what is generally supposed, potassa fusa, from its forming with oil and mucus a slimy saponaceous compound, admits of being more easily confined to the strictured portion of the urethra than the more watery solution caused by the nitrate of silver. This is one advantage in favour of the caustic alkali. Another, arising from this miscibility with oily substances is, that its action can be better regulated than that of the nitrate. It may be used either as a mild stimulant or as a powerful caustic.

It appears to me, however, that the principal superiority of this caustic to the nitrate of silver consists in its more powerful solvent effect in removing hard strictures, and that with perfect safety and comparatively with but little pain. It has been previously stated that when used for the destruction of hard gristly strictures, it must be more freely applied than recommended by Mr. Whately; but the quantity should be very gradually increased, and regulated according to its effects. Some of the accidents caused by the nitrate of silver when used for the destruction of strictures, have arisen either from the slough which it produced having so completely obstructed the previously contracted channel as to cause retention of urine, or, on its separation, hæmorrhage to a considerable amount. From the tendency of the nitrate of silver to produce adhesive inflammation, it is probable that the coagulable lymph, caused by its free application, may form no slight barrier to its destructive effects. This tendency, I think, may, in some degree, account for the great number of applications of this caustic which were required in some of Sir Everard's cases.

Potassa fusa when used for the destruction of a stricture, instead of causing a solid slough, appears to exert its salutary effects by a process of inflammatory softening and dissolution of the thickened tissue forming the obstruction. A sufficiently free application of this caustic to be effective in old hard strictures, is usually followed by more or less of a slimy muco-purulent discharge, at first generally tinged with blood, but soon becoming of a dirty white colour. The term abrasion, used by Mr. Whately, is not certainly the most appropriate to signify the effects of the caustic potash in the removal of strictures, for its action cannot be regarded as mechanical. The term appears to have been used by him to express a slight solvent effect, in reality an ulcerative dissolution of the surface of the stricture. Probably the best explanation of the action of these two caustics, when applied for the destruction of

strictures, is that the nitrate of silver causes a slough often sufficiently solid to obstruct the passage of the urine, whilst the more solvent effect of the potassa fusa is quickly followed by a thick slimy discharge of the tissues which it has destroyed.

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After having succeeded, by the application of potassa fusa, in effecting a passage to the bladder, the remaining dilatation of the stricture can often be readily effected by the common bougie or sound, the latter being generally in hard strictures, as previously observed, by far the best dilating instrument. Should the obstruction, however, yield very slowly, much good will often be done by the occasional use of the potash. Where a considerable portion of the urethra is much thickened, and of a gristly hardness, it must not be expected that the whole of the diseased tissue can be safely removed by the caustic. I have generally found, however, that, after a free passage for the urine has been obtained by dilatation of the urethra to nearly its healthy size, the greater portion of the thickened tissue will gradually disappear; and, if the patient should prudently follow the direction of his surgeon in continuing regularly the use of the bougie or sound, the remaining part of the disease, with few exceptions, will eventually lose much of its disposition to contraction.

There are old strictures of small extent, varying from a slight annular obstruction to one of an inch or rather more in extent; and there are others, where the mischief is comparatively recent, but which often prove very troublesome from their extreme irritability. Such strictures, I have good reason to believe, will be less likely to return when treated by potassa fusa, than when dilated with the bougie only, as the potash seems more effectually than the latter to remove the diseased tissue.

The objection urged by the opponents of the use of caustic in urethral obstructions, that its application has sometimes been productive of stricture, will, in general, be found to merit but little attention, being, with few exceptions, brought forward by gentlemen having no experience of the treatment which, following the fashion of the day, they think proper to condemn. It must be recollected that caustic of any kind is seldom used but in strictures of an unyielding character, except in cases where it is applied in a mild manner for the relief of spasm.

From long experience of the effects of the caustic potash when applied to urethral obstructions, I can confidently assert that it has evinced no tendency to the production or increase of stricture in the numerous instances in which the remedy has been used by myself; and I am moreover thoroughly convinced that there will be found less disposition to re-contraction in the more aggravated forms of stricture, when properly treated with potassa fusa, than when by dilatation simply.

Upon the question of perineal section versus potassa fusa, Mr. Wade writes as follows :—

When it is recollected that the incision, in perineal section, is made through diseased tissues, and not, as in lithotomy, in healthy structures, the occasional occurrence of phlebitis or erysipelas cannot excite surprise; but how very rarely are such accidents the results of the latter!

It has now been sufficiently shown that all surgeons have not had the same good fortune as Mr. Syme in their operations for division of strictures by perineal section, when performed according to his method. The mischance which has occurred to others may soon happen to him. However skilfully perineal section may have been effected, who can insure his patient from the

occurrence of erysipelas, or phlebitis? What degree of human care or foresight can so brace up the cords of life to the enduring point as always to guard against a fatal prostration? It may be that a patient has to submit to perineal section, whose vital powers have been so depressed by long suffering, that the loss of but a few ounces of blood may be sufficient to turn the scale against him. Surely it must be a strange perversion of reason, when gentlemen, well knowing the deplorable results of Mr. Syme's operation, continue to speak and write of it as being perfectly safe and satisfactory in its effects. With the late calamitous terminations of this operation, like beacon-lights to warn us of its dangers, I cannot but think that we are bound by every means in our power to relieve a stricture patient before having recourse to the knife.

There are some remarks of the late Mr. Aston Key, regarding operations, that we shall all do well to bear in mind. They occur in 'Guy's Hospital Reports.' When alluding to division of the prepuce in phymosis, Mr. Key observes:—"As the knife is at all times but an indifferent substitute for skill, and should ever be avoided if possible, the circumstances rendering it unnecessary are not beneath consideration." Taking these words for our text, let us endeavour to ascertain under what circumstances the surgeon may be justified in submitting a patient to perineal section; for there are, undoubtedly, cases, fortunately of rare occurrence, in which that operation will afford the only chance of relief; and there are others, equally rare, in which it may, probably, be the most judicious proceeding.

In some strictures, from mechanical injury of the urethra, followed by more or less sloughing of the injured parts, a hard, gristly cicatrix may be left, while the greater portion of the urine is, probably, passed through fistulous orifices in the perineum. In such a case, dilatation and caustic may fail in the best hands, and division of the obstruction by perineal section, be the only chance of relief for the patient. Where the urethra has been divided by a wound in the perineum, a hard cicatrix may be formed at the seat of injury, and the contraction cannot be kept sufficiently open by other means to insure the patient from danger, division by the knife may become advisable, although that proceeding will not always be successful; for so strong a tendency have cicatrices to contract, that, although great care be taken, by constant introduction of instruments, to preserve the advantage which has been gained by the operation, yet the stricture may return nearly, if not quite, as bad as ever. A case of hard, contractile stricture, not the result of mechanical injury, which has long remained impermeable to all milder means of treatment, and where the patient's general powers are suffering severely, the operation of perineal section may be advisable.

I have stated the above as instances in which perineal section may possibly be necessary; for, although the potassa fusa has succeeded in many such cases, who can calculate upon invariable success with any one method of treatment? I believe, however, with the exception of cases in which a portion of the urethra is obliterated after the sloughing of a part of the canal, or when a hard, contractile cicatrix is left, from complete division or laceration of the tube, that perineal section will rarely be necessary. With regard to Mr. Syme's operation, it is at present my conviction, that when an instrument, however small, can be passed into the bladder, the persevering application of caustic potash will accomplish more enduring good for the patient, if there be time for its operation, and life be placed in no immediate peril, than can be effected by perineal section, and without the slightest risk of a fatal occurrence. My reasons for such an assertion are, that I have lately, by the application of potassa fusa, succeeded in several cases when no hope had been

held out to the patients by perineal section; and in two of them, both nitrate of silver and caustic potash had been used, but the latter neither with that confidence nor perseverance requisite for its efficient action in such cases.

Mr. Wade's book, as we have already said, is not confined to the treatment of stricture by caustic potass, but it embraces all other kinds of treatment, and contains clear and distinct opinions upon them all. We have extracted the author's views on potassa fusa in preference to other parts of his volume, in consequence of their novelty, and the claim they have upon the careful attention of the profession; but the whole volume is full of practical and important information, and any part of it might have afforded profitable matter for quotation.

10. *Dr. Van Oven on a Case of Fracture of the Thigh-Bone occurring spontaneously in himself.*—"On the 25th of May, 1852," writes Dr. Van Oven, "I went to bed in perfect health and fell into a sound sleep. At three o'clock in the morning I awoke in the act of turning, with a feeling of violent pain in the thigh, just above the knee. On putting my hand to the part I felt the belly of the vastus muscle in strong contraction. At the same moment a loud snap was heard. The swelling of the muscle immediately subsided, and I could feel the grating of the two ends of the bone. I did not experience much pain, and the part was flabby and swollen. From that time I never felt any severe pain at the part nor in the limb. I applied a cold wash to the limb, and the swelling began to subside. It was found on examination that a tranverse fracture had taken place, three inches above the knee-joint; the bone was lying in proper position. In other respects I was, and had previously been in excellent health. Before the accident I was in the habit of taking a considerable amount of exercise. I had occasionally suffered from slight neuralgic pains in various parts of the body, if the digestive organs were in any way deranged. On the day before the occurrence of the fracture, I had felt a slight numbness in the leg and foot, below the knee, which was removed by a brisk walk. The progress of the cure was regular and rapid, and by the 9th of July the limb was considered sufficiently firm to allow of the splint being removed; and some short splints having been applied, I was allowed to get up, and shortly afterwards went out of town for change of air, and walked about with the aid of crutches, which, on the 10th of August, I changed for two crutch-handled sticks, with which I could walk for an hour without fatigue. On the 30th of September I returned to town and resumed my ordinary pursuits, and have since never felt any inconvenience. I have been unable to find any record of a case of fracture of one of the larger bones by the action of the muscles alone, without the occurrence of any fall, blow, violent exertion, or other exciting cause. I am but fifty-six years of age; have led a perfectly regular life; am capable of considerable exertion; I am not aware of any hereditary tendency to disease, such as cancer or scrofula; I have never had syphilis, nor have I ever been salivated."

* Lancet, Dec. 25, 1852.

C. B. R.

# III.

## REPORT ON THE PROGRESS OF MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

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1. *Professor Murphy upon the Use of the Forceps in Difficult Labour.**—"Questions connected with the use of instruments in difficult labour," writes Dr. Murphy, "are so embarrassing, and have given rise to such warm controversies, that any light which may be thrown upon them by individual experience is of value." With this object, Dr. Murphy has recently brought before the Medical Society a few cases of labour requiring instrumental aid, and which appeared to him to illustrate some important points connected with the subject. One of these questions concerns the comparative merits of the crotchet and the forceps, as a means of delivery when the head is fixed in the brim of the ovate pelvis. Some practitioners, he remarks, do not hesitate to perforate the head in these cases; they consider that the safety of the patient requires it, and object strongly to the forceps as a dangerous instrument under such circumstances. He believes that these objections have no foundation in fact. On the contrary, he is inclined to the opinion, that not only in these cases may the long forceps be safely used, but that even in some of those where the head has not entered the brim of the pelvis in consequence of disproportion, it may be made to do so by this means, or by the operation of turning the child. These observations apply exclusively to the ovate deformity of the pelvis, where the whole difficulty exists in the diminished conjugate measurement of the brim.

"Some years ago," he continues, "I met with a case which enlightened me very much on this question, and made me hesitate greatly as to the propriety of perforating the head of the child when thus situated. A lady had been in labour of her twelfth child, each labour being more and more difficult. The head was above the brim, and so remained the whole night, apparently prevented from entering the pelvic cavity by want of space in the conjugate axis. I attempted to apply the long forceps; but, after several efforts, failed. No alternative seemed left to me but to perforate. I proceeded with great reluctance to the operation, and very fortunately pushed the head with the perforator from the brim towards the iliac fossa. The arm came down, and I immediately proceeded to turn the child, in which I completely succeeded, and delivered it alive. Having this useful lesson strongly impressed upon my mind, I met soon afterwards with the following instance.

* History of a Few Cases Illustrative of the Use of the Forceps in Difficult Labour, by Dr. Murphy. Assoc. Med Journal, March 18, 1853.

Case I. *Pelvis Contracted in Conjugate Axis two inches and three quarters; Delivery by Turning the Child.*—On February 25th, 1848, I was sent for to see a hospital patient, living in King William Street, Strand. She had applied several months previously at University College Hospital, for aid in her confinement, and had been twenty hours in labour before I saw her. The os uteri was nearly dilated, the head resting on the brim of the pelvis. She was a pale delicate looking woman, and very intolerant of her pains, which caused her great agony. The pelvis was contracted in the conjugate axis of the brim, as nearly as I could judge, to two inches and three quarters, certainly not quite three inches; the cavity was wide, and also the outlet, only that the coccyx was bent so much forwards as to become an obstruction. I saw no probability that labour, no matter how long continued, should terminate naturally; and there remained only the choice of allowing labour to continue some hours longer, in the hope that the head might enter within the brim, or to deliver at once. I preferred the latter course, because I did not wish to expose the woman to any greater protraction of her intense suffering, and I wished to give the child the best chance for its life. She was placed under the influence of chloroform, sufficiently to blunt the intensity of her pains; and having allowed labour to continue for a little time under its use, I proceeded to apply the long forceps (that which I used was straight). I found it, however, impossible to act with it; because, when the blades were applied to the head, the shaft and handles pressed strongly against the perineum and coccyx, which was bent so much forwards, that no efforts could prevent the handles taking the same direction, and the blades, of course, the opposite one,—that is, off the head. I threw them aside, and determined to make the attempt to turn the child. The perineum and coccyx opposed greatly the passage of the hand and arm, and there was much difficulty in directing it towards the brim of the pelvis (the axis of the brim and that of the outlet were at an angle of nearly 45°). The hand, however, passed through the brim more easily than I expected, and a limb of the child was brought down, but not without some trouble. Want of space in the passages made it equally difficult to reach and bring down the remaining limbs; however, the body was brought through the pelvis safely, but the head still remained. The finger was placed within the mouth, the back of the neck seized, and the hands made to correspond as nearly as possible with the transverse axis of the pelvis; extraction was then made, but, after several efforts, I could not move the head. The funis still pulsated; and having placed it out of reach of pressure, I allowed the patient a little rest. Efforts were again made to extract, which at length succeeded, but the child was still-born, the bones being very strongly overlapped. I think that its death occurred while the head was passing the brim; because pressure on the funis was unavoidable, and this was too long continued, in consequence of the delay in the transit.

So far as the extraction of the child through the pelvis is concerned, this was by far the most difficult operation of turning I ever had to perform,—not so much from contraction in the brim as from want of space in the outlet, in consequence of the abrupt curve of the coccyx. The woman recovered without a single unfavorable symptom.

The result of this case convinced me of the practicability of turning in this degree of disproportion; and the child was so nearly saved, that it seemed to me to afford a powerful evidence in its favour over perforation. The only doubt I had was, whether I might not have succeeded as well, if not better, had I used a curved in place of a straight forceps in the first instance. I thought that the curve of the forceps, corresponding to the curve of the

coccyx, might have enabled me to apply the instrument more easily. This doubt was removed in the following year (1849), when the same woman applied for aid under precisely similar circumstances. She was again pregnant; labour took place in March. She was under the care of a very intelligent pupil; and as soon as the os uteri was fully dilated, I determined on delivering her. I brought for the purpose a forceps strongly curved, but found it just as difficult to apply as the straight one that I had tried before. I therefore had recourse again to turning the child, in which I experienced nearly the same difficulty as on the previous occasion; the child, also, was still-born.

Had this patient come for assistance at the seventh month, when she was desired, I have no doubt that the child could have been saved. She recovered from this labour equally well: and the results of the operation in both instances convinced me that perforation was a most unjustifiable operation to adopt, in cases where the disproportion in the conjugate axis of an ovate pelvis exceeded two inches and a half. This view was confirmed by the following case.

In November 1847, I delivered a woman by perforation, in consequence of a contracted pelvis. As it was the first case in which I had the opportunity of using chloroform, and judging of its effects, I reported it in a tract published in 1848, entitled 'Chloroform in the Practice of Midwifery;' and from that publication I shall quote as much as is necessary for the subsequent history.

Case II. *Contracted Pelvis, two inches and a half from Pubis to Sacrum: Delivery by Perforation after thirty-nine hours' Labour.*—E. G—, aged 36, living in Grove Street, Camden Town, of moderate height and delicate appearance, was taken in labour with her seventh child, November 24th, 1847. All her previous labours had been protracted, varying from fifty-six to eighty hours, and all her children (males, with one exception) had been still-born. In her last confinement, after being sixty hours in labour, she was delivered by the forceps of a dead child. Her present labour commenced November 24th, at six o'clock, a.m., and the pains continued without interruption the whole of that day and night. She was seen on the following morning about eleven o'clock. The os uteri was nearly dilated, the vagina moist and cool, the head above the brim of the pelvis, and its conjugate measurement contracted to two inches and a half. It was evident that the head could not descend into the pelvic cavity; but labour was suffered to proceed, in order to ascertain whether it might enter the pelvis sufficiently to be extracted by the long forceps. She was seen again in the evening, at half-past eight o'clock, having been left in charge of the gentleman in attendance during the day. She had now been more than thirty-eight hours in labour, during the whole of which time she had very strong and regular pains, but without any alteration in the position of the head; the writer therefore determined on delivery by perforation.* This woman had been placed under the influence of chloroform, delivered, and made so favorable a recovery, that she was walking about Camden Town three weeks afterwards. She had been very strictly charged to apply at the hospital before the seventh month, if she should ever again become pregnant. She did so in 1849. Premature labour was induced; the child presented the breech, and was delivered still-born.

The same charge was again given to her, but she neglected to attend to it. She became pregnant in 1851, and gave us no notice of it until near the full term. I have reason to know that she was quite determined not to have

* Chloroform in the Practice of Midwifery, p. 6.

children: the last child was very nearly saved, and she was not so solicitous to go through the same ordeal again to save another. I therefore did not see her until she was in labour. I called in the evening, and found the os tincæ nearly dilated, the head above the brim. I might then have delivered her as before; but the same determination which led her in one direction, led me in another, and an opposite one. She cared only about saving herself: I was resolved to use every effort to save the child. I, therefore, allowed labour to go on for twenty-four hours, in charge of the gentleman in attendance; and, although frequently solicited to deliver her, did not see her until the following evening. I delayed, in the hope that the head might possibly be forced within the brim of the pelvis, so that I might apply the long forceps; and was greatly pleased to find my wishes realised. I found the head fixed there. She was again placed under the influence of chloroform; the long straight forceps were applied, and with extreme difficulty the head was brought through the brim into the cavity, from which it was easily extracted. I could not, however, save the child: its death was caused by the extreme pressure of the brim, which was so great as to produce an indentation in the cranium of two or three lines in depth. As on former occasions, so in this, she recovered perfectly, without any drawback.

The case was a very instructive one, because, when I first saw her in 1847, the pelvis had been accurately measured, and the conjugate axis did not exceed two and a half inches—a space through which it seemed to me impossible for the unreduced head of the child to pass. Let the vault of the cranium be compressed as it may, still the transverse measurement of the base is two and a half inches; and, therefore, the inference must be that it would not pass; but it did so nevertheless; and I can only attribute it to the expansion of the pelvis—the head, like a powerful wedge, stretching the symphysis pubis and sacro-iliac articulations to their utmost extent. The conclusion, therefore, at which I arrived, was, that whatever doubt might exist as to the propriety of attempting to deliver with the forceps, or by turning, when the conjugate axis was two and a half inches, there was no question about it when the space exceeded that amount; and that a diminution to three inches, or even to two and three-fourth inches, would not be too great to make it possible to avoid perforation.

Case iii. *Children Still-Born in Seven successive Labours: Craniotomy several times: Delivery by Forceps in Eighth Labour: Child Alive.*—The above view was supported by a case that I was requested by Mr. Collins, of Camden Town, to see, in July 1851. His patient had been in labour of her eighth child, not one of the previous children being born living, and several of them delivered by craniotomy; so much so that, when I was sent for, she expected that, like preceding consulted accoucheurs, I should proceed at once to deliver by perforating the head. I saw her at midnight, and found the os uteri nearly open, the membranes ruptured, and the head above the brim of the pelvis. I could pass the four fingers of my left hand easily within it, and judged that the degree of disproportion in the conjugate axis was about three inches. I might have then turned the child, but I preferred allowing the labour to proceed, in the hope that the head would get within the brim of the pelvis. Having arranged with Mr. Collins to see her sooner, if he thought necessary, we agreed to meet the following day at twelve o'clock, leaving her to nature for twelve hours more. When I arrived, what I hoped for had taken place: the head of the child had entered and remained fixed in the brim of the pelvis The long forceps was at once applied; and after several powerful efforts were made, the head at length moved, and I succeeded in bringing it into the cavity, from whence it was easily extracted. The child was born living,

greatly to the astonishment of the mother (a woman in humble circumstances) and her nurse; both of whom imagined that, as on former occasions, it must be destroyed. So little did she expect to hear its cry, that she had no baby-clothes prepared for it, which caused some little confusion. This woman recovered without any unfavorable symptoms.

Taking these cases collectively, they seem to me to determine some of those questions that I would submit:—1st. Whether, in the ovate deformity of the pelvis, we are justified in perforating the head and destroying the child, when the head is fixed in the brim of the pelvis? This, I think, will be answered in the negative. 2dly. When the head has not entered the brim of the pelvis, what amount of space in the conjugate axis will justify the attempt to save the child, either by the long forceps, or by turning? I think we may do so, if it exceed two and a half inches. The probability of saving it may be slight, but it is by no means impossible; and, as the necessity for destroying it is not proved in such cases, we are not justified in doing so.

When the head of the child has entered the pelvic cavity, and ceases to advance, the arrest may be caused by a slight deformity of the cordiform character; that is the planes of the ischia may be pressed inwards sufficiently to prevent the rotation of the head. No further progress is made, and the head is said to be impacted; the ear cannot be touched without great difficulty; and it is impossible to pass the finger laterally between the head and the pelvis. The treatment of such cases as these became a question of great interest to me soon after my arrival in London, because the propriety of using the forceps when the head was "impacted," was very warmly disputed by no mean authorities in obstetrics; and my own experience was decidedly opposed to any such attempt, in the kind of cases that came under my observation when a resident physician in the Dublin Lying-in Hospital. The cases of impaction that there presented themselves, were of quite a different character. The large head of a male child, much advanced in ossification, was wedged in the deeply conical cavity of a perfectly unyielding pelvis. It was very difficult to apply the forceps; and when the attempt was made successfully, the instrument became as impacted as the head; it could not be moved; and great injury was done to the passages. The obvious conclusion was against making such attempts, but rather to perforate the head, and extract with the crotchet as soon as the child ceased to exist. This could always be ascertained by the stethoscope, in sufficient time to operate before any symptoms dangerous to the mother presented themselves.

I was anxious, therefore, to ascertain whether such cases of impaction were frequent here; and whether, in this controversy about the forceps, the term "impaction" had precisely the same meaning as I had given to it. I soon found that this was not the case; that such instances were rare; but that the same degree of disproportion was produced in a manner altogether different. The pelvis was slightly distorted; the cavity presented the characters of the cordiform pelvis, in which the head was wedged, and might be called impacted; the ossification of the bones was not advanced more than usual, sometimes not so much so; the child was frequently a female; and if the constitution of the patient were strong, and the action of the uterus powerful, I have no doubt that the head would be forced through the pelvis by the natural efforts alone. *The case, however, always failed here:* the habit was feeble, the pains weak, or, if vigorous, soon ceased to be so; and as no advance was made perhaps for several hours, aid was called for. Were we to perforate in these cases of impaction, or to use the forceps? I came to the conclusion of adopting the latter course, and found it successful; so much so, that I think I

have not performed the operation of perforation five times since I came to London. Time will not permit me to detail several of these cases, in which I delivered with the forceps. I shall, therefore, only select a few of the most striking.

Case iv. *Impaction of the Fœtal Head: Feeble Uterine Action: Delivery by Perforation in First Labour, and of Living Children by Forceps in two subsequent ones.*—In 1847, I was summoned to a lady, who had been nearly five days in labour of her first child. She had suffered great agony during that time; and when I saw her, the head was fixed in the pelvic cavity, the bones overlapping very much: the vagina was congested and tender, and the discharge from it very offensive. The child was evidently dead; and I agreed with the gentleman who called me in, that perforation alone could be performed. A putrid child, of a very large size, was thus delivered.

This lady became pregnant of her second child; and was attended by a different practitioner. On September 20th, 1849, labour commenced in the morning, with irregular but severe pains, which became more uniform towards night, but were not strong. Labour continued more regularly during the 21st. The pains ceased, however, on the morning of the 22d; and there was no active labour during that day. Ergot of rye had been given without effect. In the evening I was sent for. The head was tightly fixed in the cavity of the pelvis near the outlet; the ear could just be touched, but with great difficulty. I applied the forceps, and, in about half an hour, delivered a living girl, to the great joy of the mother, who supposed that, as before, the child must be destroyed.

In 1851, she requested my assistance for the third time, and engaged me especially for this confinement. Labour commenced on August 6th in the evening. She had the usual severe pains during the night, which, however, I controlled by chloroform; and about eight o'clock in the morning the head entered the pelvic cavity, where it remained until one in the afternoon. I waited thus for five hours, and finding no progress made, applied the forceps. The head gradually descended, and in about an hour a very large girl was delivered living.

In this case, the disproportion was in the cavity and outlet. Though slight in degree, it was sufficient to prevent delivery; because the action of the uterus was more powerful, the pains caused agony, and were very inefficient. In her first labour, the patient was four days suffering in this way, by which the progress of the labour was much interrupted; and at length the pains failed altogether, the child died, became putrid, and was so extracted. In her second labour, she was two days suffering the severest pains, to no purpose; they ceased, and in the evening, I delivered her of a living child with the forceps. She would not then have chloroform; but in her third labour, the apprehension of her former sufferings, and the more favorable accounts that she heard about this anæsthetic, led her to wish for it. I gave it to her sufficiently to relieve the intensity of the pains, but not to remove consciousness. The labour proceeded most favorably. In about ten hours, the head descended into the pelvic cavity, from which it might have been at once removed. I waited, however, for five hours, in order to give the uterus fair play—a delay that I cared less about, because she did not suffer much pain during that labour.

Case v. *Impaction of the Head: Delivery by Forceps: Child Still-born.*—A few years ago, I was sent for by Mr. Griffith, of Greville Street, to see a lady, in labour of her first child. She had been in pain about forty-eight hours before I saw her. I found the head in the pelvic cavity, which it filled so completely, that the ear could not be felt. The bladder was fully distended, and the vagina very much congested; it was extremely hot and tender. The

pains were active and regular. Finding matters in this condition, I was very unwilling to use the forceps then, and I would not destroy the child. It was agreed, therefore, to give the uterus a further trial, but to use means to prevent the increase of inflammation. The urine was drawn off, a cathartic enema administered, and other means used for this object. We met at night, and arranged to meet again the following morning at nine o'clock.

When I called, I found that no advance had been made. I therefore determined to remove the child, and at least to try the forceps for this purpose. The urine was again drawn off. There was great difficulty in applying the forceps; and, when they were applied, it was equally difficult to act with them. However, the head at length began to advance, to descend slowly on the perineum, and was brought through. The child (a girl) was still-born; and every effort to establish respiration failed. It was unusually large, and the head was greatly compressed.

This lady recovered most favorably from the effects of this labour. She was soon able to be up and about; but just as the month concluded, I was urgently summoned to her, and found her dying, in consequence, I believe, of some violent and unexpected shock; but the cause of this change was then a mystery. There was no hæmorrhage, or other way of accounting for it; and, unfortunately, no *post-mortem* examination was allowed.

This case resembled the most nearly the kind of impaction that I had been accustomed to. It differed, however, altogether in the general character of constitution and temperament. The lady had a fine delicate complexion, with small bones, and was in no way robust. She had much more the appearance which indicates a scrofulous diathesis, than that of rude health. I inferred, therefore, that the difficulty arose from slight disproportion in the pelvic cavity, which was sufficient to prevent the head of so large a child from making any advance, and produced impaction. Had she been delivered the night before, it is probable that the child would have been saved.

Case vi. *Impaction of the Head: Delivery by Forceps: Child Alive.*—In February, 1851, I was requested by Dr. Bowman, of Dalston, and Mr. Gill, of Islington, to see a lady who had been two days in labour of her first child. An obstetric physician had seen her early that morning; he would not then interfere, but gave it as his opinion that labour should be permitted to proceed for six hours longer; and if delivery did not then take place, the child should be removed by the crotchet. Other engagements prevented this gentleman from again seeing her; so I was sent for, and arrived about four o'clock in the afternoon. The case was very like that which I have just detailed. The head was fixed in the pelvic cavity very tightly; the ear could be felt, but not without difficulty; there was no great pressure on the urethra, neither was there any evidence of inflammation in the vagina: so far, therefore, the balance was in favour of this patient. I stated to the gentleman who consulted me, that I thought the child might be delivered by the forceps; and, as they agreed, I proceeded to the operation.

There was great difficulty, from want of space, in applying the pubic blade: it was at length placed over the ear of the child. The opposite blade was more easily introduced. When the instrument was fixed, the pains, which had ceased, returned with vigour; and, by acting with them, the child was delivered in half an hour. It did not at first inspire, but the heart was acting: by degrees, respiration was fully established, and the child saved. This lady recovered without any unfavorable symptoms.

These cases, to which I might add others of a similar character, convinced me that in these discussions about the comparative merits

of the forceps and crotchet in difficult labours when the head was "impacted," we were not speaking of the same thing. When the head is impacted, because the pelvis is slightly distorted, the forceps may and should be used; but when the impaction is caused by the conical cavity of the masculine pelvis, it should be avoided. The former class of cases prevail here in a much greater degree than the latter; and, consequently, the operation of perforation should be very seldom performed. I have stated how it may be avoided in those cases, where it has been performed in consequence of want of space in the conjugate axis of the pelvis. I trust that I have now shown that it may also (with these few exceptions) be avoided when the head is fixed in the pelvic cavity. If this be granted me, an important corollary follows this conclusion; viz., that delays under such circumstances are always dangerous. If I am obliged to perforate, I delay the operation as long as possible, to avoid destroying the child; but if I think that it can be saved, the sooner the mother is delivered, consistently with her safety, the better. Hence, as soon as the disproportion is ascertained, and three or four hours are allowed, in order to estimate the power of the uterus, the forceps may be used: a longer delay exposes the patient to all the risks of inflammation. In fact, many of the bad effects of forceps operations arise from having recourse to this aid far too late, when the passages are inflamed. The action of the uterus is suspended, because inflammation is commencing in the tissues; the head of the child is allowed to remain in the same position for ten, twelve, even twenty-four hours; at length, the forceps is applied, and produces perhaps a slough, and consequently a fistula; the perineum never escapes. Such unfortunate results might all be avoided by more timely interference.

These facts may also show the importance of a more careful study of the peculiarities of the pelvis and their diagnostic characters. By this means only can we recognize the true character of the difficulty the moment it presents itself. I know of no other way of discriminating cases, which require aid, from those which may be left to themselves. To decide such a question by time alone, exposes the patient to all the risks to which allusion has been made. A previous knowledge of the cause of arrest is absolutely essential, in order to avoid unnecessary delay.

2. *Dr. Hamilton on the Advantages resulting from a timely use of the Forceps.**—Dr. Hamilton's paper is one of great importance, from the novelty of the author's facts and from the intrinsic merits of his deductions.

The question to be dicussed, (writes Dr. Hamilton,) is presented in a condensed form in an article on Dr. Murphy's Midwifery, in the 'Medico-Chirurgical Review' for last October, the general conclusion deducible from the statistical facts collected by Dr. Murphy being—1st. That in the forceps deliveries occuring in 78,892 midwifery cases, in the hands of British, French, and German practitioners, nearly 1 in every 4 of the children was still-born.

* On the Mortality arising from the Use of the Forceps in Tedious Labours, by G. Hamilton, M.D, Falkirk. Medico-Chir. Rev., April, 1853.

2d. That, in protracted labours, "so far as the children are concerned, the proportion still-born is very much the same, whether the forceps be employed or not; the difference, if any, being in favour of leaving these cases to nature." 3d. "That the use of instruments is to be discountenanced in all but exceptionable cases of this kind, in which the habit of the patient is too feeble to admit of her enduring a protracted labour without risk of exhaustion." 4th. That Ramsbotham employed the forceps once in 729 cases, Joseph Clarke once in 742, Collins once in 684, Kilian once in 78, Carus once in 14, Siebold once in 9; and "Dr. Murphy's recommendation is to employ them only in cases of positive arrest," unless dangerous constitutional symptoms are present.

For comparison with the above, I shall now give the results obtained, both to mother and child, in my own 300 cases; and I may mention, that the few deductions I shall afterwards make on this subject are supported by a similar practice extending to at least a thousand cases. I have limited myself to the former number only because my notes regarding the earlier cases are less complete than I could wish. The numbers thus presented for statistical comparison, though limited, possess the obvious advantage over those collected from a variety of sources and attended by a variety of parties, that they were all, from the commencement, under my own guidance, in the same locality, and were all subjected to similar treatment. The population among whom I practise is generally robust and healthy, and is composed partly of the upper and middle classes, and partly of the working agricultural and manufacturing classes.

1st. There were 305 children, 5 of the labours having yielded twins.

Of these 305 children, 8 were dead at birth; 5 being putrid when born, and 1 having been destroyed at the commencement of labour, in a case of placental presentation. Of the other 2, 1 almost certainly died before the labour began. The remaining case formed a breech-presentation, in which considerable force was required to deliver the head. Setting aside, therefore, as seems fair, the first 7 cases, the mortality to the children at birth, from the labour process, was 1 in 298.

2d. In the 300 cases the forceps were used 41 times—rather less than 1 in 7; and all the children were born alive.

3d. Of the whole children born alive, 10 died within about a week; 6 having been delivered naturally and easily, and 4 with forceps. Of the former, 2 were certain to have died, of the latter 1, from being premature. We have thus, of children that might have lived, 4 in 256, or 1 in 64, dead within a week, where the labour was natural; and 3 in 41, or about 1 in 14, where the forceps were used.

4th. The forceps were applied chiefly in first labours, and in females who had a particular form of pelvis. Thus, 10 primiparæ were so delivered; and among 7 other females they were used 17 times during the period included in the enumeration. If these 27 are deducted, we have the forceps used, in the remainder, in 1 in 21.

5th. The labour-process proved fatal to 3 mothers, or to 1 in 100, in all. Of these, 1 had a natural labour, and the other 2 were delivered with forceps. The mortality to mothers was thus 1 in 259 where labour was natural, and about 1 in 20 where the forceps were used.

6th. In none of the cases did any local injury to the parts occur from the use of the forceps.

The mortality to the children, from the labour process, we thus find to be, under the treatment pursued by me, 1 in 298; while Dr. Clay gives the mortality to the children in the Dublin Lying-in Hospital, in 156,100 cases, as

1 in 17; Dr. Simpson, in the Edinburgh Maternity Hospital, as 64 in 1417, or 1 in 22; Dr. Lawrence, of Montrose, in a practice probably similar to my own, as 1 in 46. We find, also, the difference of mortality where the forceps were used is very great. In the article referred to, in the 'British and Foreign Medico-Chir. Review,' it ranges about 1 in 4 or 5; and Professor Simpson, in the Report of the Edinburgh Maternity Hospital referred to, states that he lost 2 in 3; while, in my practice, 41 consecutive forceps cases occur without one death. At the same time, we see that the mortality to the mothers has been very small. In only a few of the tables which I have consulted have I found it so low as in my practice—viz. 1 per cent. There must certainly, therefore, have been something very different from what usually occurs, either in the circumstances of the subjects of these cases, in the treatment employed, or in both. Perhaps the last supposition is the correct one; for—1st. Instead of the crowded, debilitated, and often rickety populations of large towns, from which these statistics are mostly drawn, I have stated that in the district in which I practise the population is generally robust and healthy, while at the same time no puerperal epidemic prevailed in the neighbourhood during the period in which the cases occurred. 2d. How far the treatment I have employed influenced the results, may be judged of from the following short sketch of the plan I usually pursue, in ordinary cases of cranial presentation.

Dr. Hamilton divides labour into only two stages, the first stage terminating when the os uteri is dilated to about double the size of a crown piece. In the first stage he allows nature to take her own course or thereabouts, and thinks there is little or no harm from delay at this time. The danger of delay, in his opinion, begins in the second stage, and hence he endeavours to shorten this stage as much as possible. In order to this, his first effort is, by proper manipulations, to slip the os uteri over the head of the child. Then he writes—

The uterus having slipped over the head, my attention is next directed to the precise position which the ear next the symphysis pubis then occupies in relation to it. If the ear is exactly opposite the symphysis, or slightly to either side in the wrong direction for making the turn into the hollow of the sacrum, I rarely put off much time before applying the forceps, provided little or no alteration is taking place *in the position of the ear*. Under these circumstances, I do not allow myself to be deceived by the advance, or rather elongation and only apparent advance, of the head. When the ear does not indicate a revolution of the head, I feel assured that the labour will be a tedious and hazardous one, and generally within an hour, an hour and a half, or two hours, according as the severity of the pains and the nature of the case may seem to require it, I finish the labour by applying the forceps. Where the broad transverse form of the pelvis is decided, as in flat or squat-made females, where the ear is on the *wrong side* of the symphysis, where the pains are severe, but no progress is made, where the mother is a primipara, or where the first half of labour has been tedious, I feel that it is generally useless, and always hazardous, to lose much time, and I usually interfere at an early period.

In using the forceps, Dr. Hamilton is especially careful to rectify the unfavorable position of the head, which he found to be the commonest and most important cause of difficulty—the ear having been placed opposite or near the symphysis pubis in about eight-tenths of the cases in which he applied the forceps.

Dr. Hamilton then adds—

The necessary inference which must, I think, be drawn from what I have stated, is, not "that it may be laid down as a rule that nearly one fourth of the children delivered by the forceps are lost," but rather, that, when applied in sufficient time, the increase in the amount of mortality caused by their use is very small indeed. I think it clearly follows from the statements made, that it is, in such instances as have been referred to, the delay in the second half of labour, and not the application of the forceps, which is usually fatal to the child. A mere inspection of the figures showing the ratio of cases in which the forceps have been used will demonstrate that very different results might be expected. We see them used in the ratio of 1 in 120 by Dr. Lawrence, of Montrose; 1 in 472 by Simpson; 1 in 617 by Collins; 1 in 553 by Ramsbotham,* with very nearly the same ratio of mortality—viz., 1 in 4 or 5; while I have used them in 1 in 7 with no mortality, in 43 cases. We see, also, the result to the children upon the whole. Dr. Clay states Collins's mortality over all as 1 in 16; Dr. Simpson's, in the Report of the Edinburgh Maternity Hospital, is stated at 1 in 22; Dr. Lawrence gives 8 in 368, or 1 in 46; while I have 1 in 298. The favorable results obtained by me, I have already said, appear to me to have risen from the second half of labour having been shortened; and my inference again therefore is, not that "the use of instruments is to be discouraged in all but exceptional cases;" but rather, that they should be used sooner and much oftener than is generally done.

With these views on the forceps, the author has rarely used the secale cornutum for the *accomplishment of labour*—not more than once in these 300 cases. He confines the employment of this drug almost solely "either to the first portion of the second half of the labour, where the case has been very protracted and the pains have become inefficient, or to cases where the head cannot easily be reached by the forceps."

In conclusion, Dr. Hamilton urges the importance of the subject,—from the numbers of the children saved, and from these children, as a rule, being finer than the rest; from the lessened danger of the mother (for her safety and that of her offspring go pretty much together); and from the time saved to the medical practitioner.

3. *Dr. Mackenzie on the source of Hæmorrhage in cases of Partial Separation of the Placenta.*†—After some preliminary quotations and considerations calculated to show that the opinions of obstetrical authorities are very various upon the point in question, Dr. Mackenzie proceeds to investigate the matter experimentally.

"It occurred to me," he says, "that some light might be thrown upon this question by selecting an animal, the organisation of whose placenta approximated nearest to that of the human female, exposing the uterus at the full period of gestation, and detaching portions of the placenta, so as to observe the actual source of hæmorrhage. This

* Edinburgh Monthly Medical Journal, Nos. 29 and 32. Dr. Lawrence does not state the forceps mortality, but only the general result. I have here quoted from Dr. Simpson's table, as I find the mortality given. In the extract from the 'British and Foreign Medical Review,' however, Dr. Ramsbotham is stated to have used the forceps once in 729 cases, and Collins once in 684.

† Association Medical Journal, Jan. 1, 1853.

experiment I was enabled very satisfactorily to perform with the kind assistance of Mr. Marshall, of University College Hospital, and the following particulars comprehend a summary of the facts which were observed.

"A large pregnant bitch, which it was calculated was within two days of the full period of gestation, was placed under the influence of chloroform, and the uterus was then fully exposed by an incision, made in the course of the linea alba, from the sternum to the pubes. The uterine tissues were now carefully divided over one of the placentæ, and at right angles with this incision another was made along the border of the placenta, so as to admit of an easy separation of the two organs. It was observed, that the portion of the uterus in apposition with the placenta was highly vascular, and bled freely upon being divided; this, however, soon moderated, and then the separation of the placenta was commenced. The moment it was begun, profuse hæmorrhage, of a bright arterial colour, took place in a continuous stream from the uterine surface, which had been previously adherent to the placenta. No bleeding whatever took place from the placental surface; and on continuing to detach further portions of the placenta, it was observed that each successive detachment was attended with increased hæmorrhage from the uterus, but none from the placenta. In due time, the placenta was entirely detached, but the blood still continued to flow from the uterine surface only.

"A second observation was now made with another placenta, and with the same results. No hæmorrhage whatever was observed to take place from the detached placental surface, whilst blood poured profusely from the uterine, increasing as the detachment continued.

"In a third instance, the placenta was abruptly torn away from the uterus, but blood continued to flow freely from the denuded uterine surface after the separation.

"In a fourth case, the placenta, fœtus, and membranes were together removed from the uterine cavity. The investing portion of the uterus contracted immediately on their removal, but still a large quantity of blood was poured out from that portion of its interior to which the placenta had been attached.

"The following observations were also made in the course of this experiment, which it may not be uninteresting to subjoin. I. On detaching the placenta from the uterus, a number of white, elastic, filamentous-looking bands were observed to pass from one organ to the other. These were probably the utero-placental arteries; they were easily torn across, and their divided extremities would seem to close up and retract immediately upon being divided, as their orifices were not afterwards perceptible, nor did any blood issue in jets from the denuded uterine surface. II. The blood, as I have remarked, which came from the uterus, flowed in a continuous stream, and was of a bright arterial colour. III. Except from the divided edges of the uterine wound, and the denuded lining membrane of the uterus, no blood escaped from this organ. IV. Although no hæmorrhage came from the detached surface of the placenta, whilst the organ was entire, it was yet found, on tearing or lacerating it, while it was partially adherent, that blood flowed from the torn or lacerated parts; but

this was to a very inconsiderable extent, and instead of being of a bright arterial colour as was that which flowed from the uterus, it was of a dark purple or bluish tint. It should be added that each fœtus was alive during these observations, and continued to live for some time afterwards.

"Thus it would appear in the canine species, that the source of hæmorrhage, in cases in which the placenta is partially detached, is exclusively the denuded uterine surface, so long as the placenta is entire; that the blood escapes in a continuous stream, and is of a bright vermilion tint; that no blood comes from any other part of the interior of the uterus; and that although a certain amount of blood may escape from the placenta, if lacerated or torn while still partially adherent to the uterus, this is comparatively small in quantity, and of a dark venous character.

How far these observations apply to cases of partial separation of the placenta in the human subject, is a question to which we can scarcely give a positive answer, until the structure of the placenta of the bitch has been further examined, and compared with that of the human species: more particularly as regards the disposition of the blood-vessels in its maternal portion. We know, for instance, that in the human placenta, the utero-placental arteries open into large cells formed by the inner coat of the vascular system of the mother, and that between these a free intercommunication exists; whereas in the bitch the venous vessels of the maternal part of the placenta do not constitute a cellular or cavernous structure, but in form and distribution resemble ordinary veins. It remains, then, to be ascertained, before the value of these observations can be determined, whether there be a free lateral communication between these veins throughout, so as to permit the blood injected into them, where still connected with the uterus, to escape at the place where they have been opened by detachment.

"Whilst, therefore, I regard these experiments as interesting in themselves, and as affording, in the general analogy which subsists between the structure of the placenta in the two cases, some support to the doctrine that these hæmorrhages have exclusively a uterine origin, I must not be understood to affirm that they are positively conclusive on this point. As I have already remarked, some further investigation into the structure of the placenta of the bitch is necessary, to enable us to assign to them their true value and significance. This I propose to undertake; and I will communicate the results in a supplementary paper."

4. *Dr. Tilt on Diseases of Women.**—This is a new work as well as a second edition, and in both respects it deserves attention.

In the introduction the modes of investigating the diseases of the ovario-uterine organs are successfully passed in review. Thus the information to be derived from an abdominal, a vaginal, or a rectal

* On Diseases of Women and Ovarian Inflammation in relation to Morbid Menstruation, Sterility, Pelvic Tumours, and Affections of the Womb, by E. J. Tilt, M. D. 2d edition, Churchill, 1853.

examination are carefully given, and also some practical hints on the art of interrogating female patients, which will be of use to the junior members of the profession. The first chapter treats of the Theories of Menstruation, and, in a few pages, the pith of the many works written upon the subject is given. The author leans towards the ovular theory, but considers that it has not yet been thoroughly demonstrated. Dr. Tilt points out the laws which govern each of the phenomena of menstruation, discussing the various symptoms both in their physiological and pathological bearings; and under the heads of family, race, national customs, temperature, habitation and civilisation, he has examined the causes which modify the appearance of puberty.

Dr. Tilt has availed himself of the researches of others, but his conclusions are principally deduced from original statistical data.

The third chapter is headed *on type in menstruation.* In this the author asserts that all menstruation is morbid which occurs more frequently than once a month.

> When *remittent menstruation* cannot be explained by an organic cause, we consider ourselves authorised to consider it dependent on some perversion of the nervous force presiding over the generative function, because the women in whom this anomaly is observed, are generally delicate and of a nervous temperament, and because we have hitherto always succeeded in bringing back menstruation to the monthly type by the exhibition of quina—the remedy by which we can so frequently cut short abnormal periodical manifestations, whether occurring in the circulating or in the nervous systems, in the shape of intermittent fevers and as the periodic pains of neuralgia.

This is a subject of great practical importance and worthy of being extensively tried by other practitioners, for *remittent menstruation* is extremely frequent, and undermines the constitution of women either by the abundance of the sanguineous discharge or by the irritability of the cerebro-spinal nervous system induced by the too-often repeated stimulus of the menstrual nisus. The efficacy of sulphate of quinine in remittent menstruation is illustrated by several cases. The fourth and fifth chapters are devoted to the study of the *ovarian nisus*, and that of the *ganglionic nervous system.* Dr. Tilt considers the ovaries to be the instruments of some nervous force which impels them to perform the menstrual function. He considers this force to be one form of that vegetative force inherent in living creatures, and which, in the higher animals, is associated with the ganglionic nervous system.

As ganglionic symptoms are enumerated, the heats or flushes which so often trouble women, not only at the change of life, but during the menstrual epochs, particularly if that function be morbidly performed, and also during amenorrhœa and lactation. The *perspirations*, local or general, so frequently observed under similar circumstances, are considered ganglionic symptoms; also, that sense of weakness often amounting to prostration and fainting, which so often characterises puberty, the change of life, irregular menstruation, chlorosis and lactation. Dr. Tilt observes that when this debility is considerable, it is always said to radiate from the pit of the stomach,

as from a centre; and, as the gastric organs are generally in a healthy state, and as the pain experienced at the pit of the stomach is not simple pain, but a sense of faintness in slight cases, a gnawing, burning or tearing sensation in others, somewhat similar to that experienced by those suffering from *lead colic*, he believes these symptoms to be due to neuralgia of the cæliac ganglia.

We regret our limits will not permit us to give case 13, but it will be read with interest by those who think the diseases of the ganglionic nervous system as much deserving of study as those of the cerebro-spinal. "Should not hysteria be the keystone of mental pathology?" is the motto of the sixth chapter, a long and highly interesting one, on the cerebral symptoms of menstruation. Classifying these symptoms as they were met by him in practice, Dr. Tilt passes in review (*a*), pain in head; (*b*), sick headache; (*c*), pseudo-narcotism; (*d*), hysteria; (*e*), epilepsy; (*f*), insanity. Pseudo-narcotism is a word introduced in a previous work, and we transcribe a passage which will show the meaning attached to it :—

We find a distinct group of cerebral symptoms caused by the ovarian nisus, which are similar to those produced by the action of narcotic poisons on the brain, and we apply to this group the term Pseudo-Narcotism, because, without prejudicing the question, it graphically expresses the fact. Those who have had much practice in the diseases of women will remember, that previous to puberty, and during the suppression of menstruation, or the dodging time, the patients complain of "a dimness of eyes," of "a heaviness in the head," "a stupid feeling," "a lump in the head," "a senselessness," of "a stupid head-ache," of "feeling heavy for sleep, but without pain," of "the possibility of sleeping anywhere," of "an unconquerable sleepiness, amounting sometimes to stupor!" Thus Emma N. could not sit down a moment without sleeping. These sensations sometimes coincide with a sense "of forgetfulness," "of feeling lost and bewildered," "of a temporary loss of wits," "of the fear of going mad." We recall the sense, although we mar the force, of the expressions by which women prove that the ovario-uterine organs have a specific influence on the cerebro-spinal system. It is so true that the peculiar state we have described resembles the influence of narcotic poisons on the brain, that when women of an advanced age experience flushes, and have an uncertain gait, or drunken eye, they are frequently, although in most cases erroneously, accused of being fond of drinking, the best proof of the aptness of the term proposed. Slight shades of the peculiar state indicated by these expressions, are the most frequent symptoms of menstruation, and when intense, they often constitute the principal peculiarity of disturbed menstruation at puberty and at cessation. Girls previously lively and clever, become stupid, and when sent on a message frequently forget what they were sent for, or how to come back; when at home, they will frequently let things fall out of their hands, and if they stoop to pick them up, they often fall down themselves. Suppression of the menstrual flow is a frequent cause of pseudo-narcotism. Its intensity varies according to the temperament of the female, and the energy of disturbing causes, and should they suddenly act with extreme energy, the result may be a state of coma, or nervous apoplexy, ending in death.

Dr. Tilt considers that it is by the nervous, and not through the medium of the circulating system, that the ovaries affect the brain so as to produce hysterical symptoms; and he observes, that pathologists

of all ages have placed the starting point of hysteria in the reproductive organ, and have noticed how each form of action of the ganglionic nervous system became successively affected with neuralgia.

The hypogastric plexus is first affected, and the female suffers from uterine colics; the mesenteric plexus suffers next, for the colics, no longer confined to the hypogastric region, rise higher. Soon the cæliac-ganglia becomes affected with neuralgia, as is shown by the anguish and sense of suffocation experienced at the pit of the stomach. Thus morbidly affected, the ganglionic reacts on the cerebro-spinal nervous system through the medium of the nerve by which the two nervous systems are bridged,—the pneumogastric. It determines hysterial delirium, coma, or convulsions; and as the morbid influence travels along this nerve it causes the globus hystericus by the pharyngeal nerves and anomalous modifications of the voice by the laryngeal nerves.

Such, in a few words, is Dr. Tilt's theory of hysteria. The frequent coincidence of epilepsy with menstruation, by the author's opinion, has been much exaggerated, while the importance of functional organic diseases of the reproductive organs in the production of insanity in women has been underrated. Having shown that morbid menstruation or disease of the ovario-uterine organs may so react on the ganglionic nervous system as to produce for a time all the phenomena of insanity in women whose cerebro-spinal system presents no appearance of morbid action; the question is asked whether insanity in both sexes may not frequently be caused by morbid action of the ganglionic nervous system, the brain itself being in a healthy condition. This view deserves consideration, as it harmonises with the theory of insanity, promulgated by the first great teachers of medicine; and those who make post-mortem examinations of lunatics in a careless manner, without opening the abdomen as is frequently the case, are not justified, the author thinks, in answering the question in the negative.

Did our space permit we would willingly follow Dr. Tilt in the consideration of the special symptoms of menstruation, which form the seventh chapter, and in that of the critical discharges, to which several chapters are devoted, for the author establishes that this function is attended by cutaneous urinary and intestinal as well as by mucous and sanguineous discharges. We can only add that the second part of the book, on the various forms of subacute and acute ovaritis, has received considerable additions and improvements; and that the value of the work is enhanced by a copious, general, and by a carefully made bibliographical index, which might serve as a model, for all the most recent works or memoirs on ovario-uterine pathology are classed according to their author's name, in alphabetical order, and the value of their contents is indicated.

5. *Mr. R. Brudenell Carter on the Pathology and Treatment of Hysteria.**—Mr. Carter's object is to set forth the opinions of the late

* On the Pathology and Treatment of Hysteria, by Mr. R. B. Carter. London, Churchill, 1853, 12mo, pp. 161.

Mr. Mackenzie, of Leytonstone, a gentleman who was well known for his successful treatment of inveterate hysteria, and this object he very cleverly realizes. The phenomena and complications of hysteria are very well described; but the chief interest of the work is in the development of that point in the treatment in which Mr. Mackenzie's chief strength lay, namely, the laying more than usual strength upon the paramount importance of moral measures.

Mr. Carter divides hysteria into three forms—primary, secondary, and tertiary. "The term *primary* being reserved to express the paroxysms produced by some original and fresh emotion, to the action of which the system has not before been subjected, I propose (he writes) to distinguish as *secondary*, the attacks following the suggested or spontaneous remembrance of the emotions to which the primary fit has been due; and to call those *tertiary*, that are designedly excited by the patient herself, through the instrumentality of voluntary recollection, and with perfect knowledge of her own power to produce them."

The chapter on treatment is long and interesting, and of this the subjoined quotation will give some idea :—

> The action of medicinal agents upon the hysterical, becomes injurious so soon as they discover, and exercise, the power of producing a tertiary paroxysm. Until that time arrives, mineral tonics and nervine stimulants may be harmlessly administered; but as soon as the deceptive element comes into play, the practical complicity of the medical attendant is sought as one of the patient's most secure strongholds, and frequently is quite essential to the success of her schemes. Hence arises that insatiable desire for remedies, with which all who have seen tertiary hysteria are familiar, and that excess of confidence in the practitioner, which is always exhibited until his suspicions are aroused. The professional man who has once sanctioned imposture, by sending medicines for the cure of self-produced illness, becomes at once an ally, whose aid is the more important for being unconsciously rendered. And, moreover, when to the voluntary production of convulsive attacks, is added the simulation of disease in some individual organ, the frequent application of medicines for the relief of the local affection, and the medical belief in its reality which such applications imply, is likely to hasten the arrival of that last epoch in the history of simulative hysteria, when the continued attention necessary from the malingerer brings its own retribution, and actually produces the morbid condition which she has feigned.
>
> The accuracy of the view thus taken of the action of medicine might easily be verified by an appeal to the ordinary results of treatment; but from the want of accurate statistical information, these results can only be furnished by individual experience. Dr. Copland states, that "there are few diseases less under the control of medicine than hysteria;" and there can be little doubt that many persons would coincide in this opinion, who, nevertheless, would have no idea that medicine could be positively injurious. I have obtained the particulars of fifty-three cases treated in the London Hospital, of which twenty-three were discharged cured, one as refractory, and the remaining twenty-nine were said to be relieved; an expression which a very small amount of improvement is thought to justify, as may be gathered from the circumstance, that of the cases *cured*, one was twice readmitted within three months. There can scarcely be any other class of patients to whom such statements would apply, and they seem sufficient to prove unquestionably, that medicines, diet, and other strictly therapeutic agencies, are entirely unable to control the disease.

Being thus compelled to abandon the idea of gaining efficient aid from the weapons by which other disorders are so often vanquished, the question necessarily arises, how far we may be successful in obtaining a counteracting influence, from powers analogous to those by which the disease has been excited? how far, that is, we may depend upon moral treatment as a substitute for medicinal?

It is sufficiently evident that no emotions could exert a permanent action on the system, if those opposed to them could always be brought into play when needed. But we have no certain means of exciting any given feeling, even when the mind is comparatively quiescent, much less when it is engaged by others of a different order, and least of all when it is engaged by them in a morbidly extreme degree.

But there are other and less direct methods in which moral treatment may be applied most beneficially; and the objects which should be aimed at by its influence, must differ with the three varieties of hysteria which have already been described.

In primary cases, nothing must be attempted beyond the withdrawal of all causes of excitement, and the endeavour to substitute for them incentives to intellectual exertion.

In secondary hysteria, where the disturbing emotion is subjective, benefit will accrue from any excitement, whether of mind or feelings, which is produced through the agency of external things.

In the tertiary form of the disease, the principal object should be, to remove the motives of the patient, by defeating the ends which she proposes to herself for attainment.

Moral treatment has been put in practice against hysteria in a very large number of cases, by the use of various harsh measures, which, although rudely and imperfectly devised, without a proper selection of suitable patients, and without the assistance of any feeling but fear, have yet, in isolated cases, been exceedingly successful, thus showing that some right principle was involved in their application. But, from the want of due discrimination between the varieties of the disease, from neglect of the fact that a well-established paroxysm is quite independent of the will, and from imperfect observation of the individual character of the patient, these harsh measures failed more frequently than they succeeded, and at last fell into well-merited disuse; for neither the cold dash, nor the infliction of pain, will exert the smallest influence over the course of a convulsive attack of average severity: and even if the punishment thus administered were postponed to the interval between the paroxysms, in the hope of preventing their subsequent occurrence, reason and experience would go hand in hand to condemn it, as being, in most cases, utterly inadequate to the production of the desired end. In support of this view, it is only necessary to urge the very principle on which the treatment rests, that is, the general predominance of moral over physical agencies, and to point out that a girl, who yielded to a few duckings and a little discomfort, would have to suffer the disgrace and degradation consequent upon detected imposture; while one who passed safely through the ordeal, would be considered by her friends to be really the victim of disease, and the discerning doctor who subjected her to harsh treatment would be condemned by them as a monster of ignorance and inhumanity.

6. *Dr. Cormack on the Galactagogue and Emmenagogue Effects of Warm and Stimulating Applications to the Mammæ.**—Dr. J. O.

* Galactogogue and Emmenagogue Effects of Warm and Stimulating Applications to the Mammæ, by Dr. Cormack. Association Medical Journal, March 25, 1853.

M'William published in the 'Lancet' of September 7th, 1850, some very interesting details regarding the use, among the natives of the Cape de Verd Islands, of fomentations with the leaves of the Ricinus Communis and Jatropha Curcas, for the purpose of accelerating and bringing on, or increasing the flow of milk when the secretion was tardy or deficient after childbirth; and in the 'London Journal of Medicine' for October, 1850, Dr. Tyler Smith described some trials made by him with the leaves of the ricinus communis, for the purpose of showing that similar galactagogue effects might be produced in London as in Boa Vista, by adopting measures similar to those employed by the natives of that island. The method adopted by Dr. Tyler Smith was essentially that detailed by Dr. M'William.

From a number of observations which Dr. Cormack has made at various times, and in cases of very different character, he is fully satisfied that the cases of Drs. M'William and Tyler Smith do not in any way support the notion of a special galactagogue power belonging to the leaves of any particular plants. It will be found, he thinks, that simple warmth, still more hot fomentations, and in a yet higher degree stimulating embrocations and cataplasms, have an extraordinary power in exciting the mammary glands to the secretion of milk, even in circumstances apparently the most adverse to the performance of their function. The leaves of the ricinus communis and of the jatropha curcas, when applied to the mammæ, produce decided stimulation; as we might expect, when we remember that they belong to the natural family Euphorbiaceæ, of which acridity is the leading character. This acridity exists in a very high degree even in the seeds of the ricinus communis; and Pereira quotes, along with similar cases, the case of a girl, eighteen years of age, who died of gastro-enteritis, from eating about twenty of these seeds.

The author's object is to establish, by the brief narration of a few facts, the following propositions:—

1st. That warmth and stimulants applied to the mammæ often act powerfully as *galactagogues*.

2d. That warmth and stimulants applied to the mammæ often act powerfully as *emmenagogues*.

3d. That the leaves of the bofareira (or ricinus communis) and jatropha curcas act as galactagogues and emmenagogues; but not by virtue of any peculiar or specific power.

1. *Warmth and Stimulants applied to the Mammæ often act powerfully as Galactagogues.*—Case 1. *Milk Restored to the Mammæ by Hot Fomentations.*—Last month, a lady, when nursing her infant, about seven months old, was attacked with acute bronchitis of moderate severity, which was successfully treated by low diet, and tartar emetic in small doses. At the end of four days, the bronchitis was cured; but the milk, which had previously been failing, almost entirely left the breasts. On the fifth day, from exposure to cold, she experienced a relapse of the bronchial affection. As she had been considerably weakened by the previous attack, and as the symptoms of the relapse were not sufficiently severe to justify recourse a second time to antimony, I ordered her to take a draught containing ammonia and chloroform, as an

anodyne, expectorant, and diaphoretic, every eight hours; and to carry out similar intentions, I also directed a succession of pillow-cases, filled with heated moist bran, to be applied to the chest. When I saw her on the following day, after this treatment had been employed, she told me that she had profusely perspired for some hours; she was (after copious expectoration) free from cough, and pain in the chest; and, what was equally a source of pleasure and surprise to her, *her breasts had become distended with milk.* This lady was able to resume nursing, and to continue it with the assistance of a suitable diet.

Case 2. *Effects of a Sinapism applied to one of the Mammæ of a Lady, five months advanced in Pregnancy; Effects of Warmth in the same Case.*—A lady was under my care for bronchitis, at the same time as the patient whose case I have just sketched. She was directed one night to apply a sinapism over the sternum, which she did, but having fallen asleep, it slipped to the side, and remained undisturbed for about an hour upon one of the breasts. For some days, this mamma was very much larger in size than the other, and its areola was also much darker. From the delicacy of this lady, and the unusual severity of the weather, I directed her to wear a double flannel jacket, and a wadded wrapper round the chest. She tells me that *the breasts are larger, and the areolæ much deeper in colour than they ever were in any of her ten previous pregnancies even at the full time;* and these conditions were established while her general health was exceedingly depressed by illness.

Case 3. *Stimulating Embrocation increasing the Supply of Milk.*—A lady, though in excellent health, had a very scanty supply of milk for her infant, when it was a few weeks old. She consulted me as to the use of means to remedy this evil; and I advised her to rub the mammæ gently, every six or eight hours, with an embrocation containing a small quantity of tincture of cantharides and oil of thyme, and to sheath the mammæ very warmly in wadding. *In a few days the milk was abundant.*

Case 4. *Hot Poultices keeping up the Secretion of Milk when this was not desired.*—A lady suffered, after her confinement, from a succession of abscesses and abortive abscesses in the breast. The surgeon who attended her treated her by antiphlogistic medicines, under which discipline she passed some wretched months, from mental and bodily depression, aggravated by hysterical attacks. The local affection did not seem to make any satisfactory progress; and the great obstacle to a cure was stated to be the impossibility of getting rid of the milk, in spite of saline purges being freely administered. The mammæ during the whole of the period to which I refer, had been ceaselessly treated, night and day, with hot poultices and medicated fomentations. These applications were abandoned, and a generous diet prescribed. *In a few days there was not a drop of milk in the breasts;* and the abscesses, actual and threatening, had ceased to give any pain, and had, in fact, almost disappeared.

These cases, which have occurred within the last few months, are considered sufficient to establish the first proposition; viz., that *warmth and stimulants applied to the mammæ often act powerfully as galactagogues.* Dr. Cormack also adds, that along with the use of such means, the regular application of an infant to the breast will greatly assist in reproducing lactation, as, according to the testimony of various authors, this stimulus has of itself proved sufficient to restore the secretion of milk, and has actually caused it to flow, not only from virgins and other women who had never been pregnant, but even

from males.* Excitement and sanguineous turgescence of the gland is induced; and these conditions afford to the organ both a power and a stimulus to perform its previously dormant function.

II. *Warmth and Stimulants applied to the Mammæ often act powerfully as Emmenagogues.*—Warm clothing of the abdomen and limbs, hot hip-baths, and medicines which stimulate the bladder and rectum (such as ergot, cantharides, and aloes), have undoubted emmenagogue powers in properly-selected cases of retarded or suppressed catamenia; and, indeed, they constitute, in various combinations, the principal measures by which the physician usually endeavours to excite the ovarian nisus upon which menstruation depends. The observant physician knows well, that while his treatment is directed to the uterus through the ovaries, the effects produced upon the mammæ are generally very striking, and the first indications which he expects to find of the uterus being roused from its torpor are turgescence and tingling of the mammæ,—phenomena which also usually precede normal menstruation. It is equally true, though not so familiarly understood, that measures which act directly and primarily upon the breasts, such as warm clothing to the bust and the application of stimulants, not only cause them to swell and throb, but likewise stimulate the ovaries, and cause the menses to flow. The practice adopted by some practitioners, of applying leeches to the mammæ in amenorrhœa, owes its efficacy to fomentations used, and the irritation of the bites.

In 1834, Dr. Charles Patterson published, in the 'Dublin Journal of Medicine,' a paper in which he described the emmenagogue power of irritation of the mammæ by sinapisms. This paper, continues Dr. Cormack, fell into his hands at the time of its appearance, when he was an Edinburgh dispensary pupil, practising, he believes, with more zeal than knowledge, and using, often with more confidence than discrimination, that plan of treatment which he had seen most recently or most enthusiastically recommended. In these circumstances he successfully employed Dr. C. Patterson's method in amenorrhœa. The beneficial results which he then obtained, produced a very strong impression upon his mind as to the efficacy of irritation of the mammæ in producing menstruation; and the experience of nineteen maturer years has confirmed this impression.

As Dr. Patterson's facts do not seem to be referred to by subsequent writers, and as the practice which he recommends is so little noticed by authors, I subjoin an extract from his paper. Dr. Patterson writes as follows:—

Mary Reardon, aged 24, of moderately corpulent habits, was admitted into the Rathkeale Hospital on the 10th of August, 1832. She laboured under slight synochial fever, which in a few days yielded to venesection and purgatives. On the 19th August, symptoms which were considered of a hysterical character presented themselves, with pain in the upper and outer part of the right side of the chest. For the latter affection, a small sinapism was prescribed; but from inattention of the nurse, it was made so large, that

* Cases in which men have suckled children are on record. The essential character of the gland is the same in both sexes.

it covered a considerable portion of the mamma. The sinapism remained on for half an hour. At the visit on the following morning, the 20th August, Reardon complained that the right breast was exceedingly painful—the pain being very different in its character from that which she had before experienced. On examination, the whole side of the chest was found considerably swollen : there was slight diffused redness of the skin ; and though the mamma itself was enlarged to four or five times its natural bulk, yet there was no circumscribed hardness, nor any tendency to suppurative inflammation. On the 21st August, the right mamma and adjoining parts of the chest were found much more enlarged than they had been at the preceding visit. The left mamma and side of the thorax were unaffected ; and it was announced by the nurse that the catamenia had that morning appeared, and were then in considerable quantity. This discharge, which, as the patient stated, had been for two years and a half wholly suppressed, continued to flow for two days ; and then began to decline, and with it the tumefaction of the mamma gradually disappeared. (pp. 193-194.)

Dr. Patterson's attention having thus accidentally been directed to mammary irritation as an excitant of the torpid uterus, he resolved to try its efficacy when a suitable opportunity presented itself. His next case is thus described :—

Catherine Power, aged 19, applied to me on the 14th September, 1832. She complained of headache, languor, loss of appetite, and inability to attend to her usual business, that of a servant. She stated, that about the middle of April, the menstrual discharge being then present, she incautiously exposed herself to cold in washing clothes at a river. The catamenia then suddenly ceased, and had not since returned; and from that period she had been constantly subject to ill-health. She had consulted different medical gentlemen, and taken a great variety of medicine, with little advantage. I directed that the clavicular half of the right mamma should be covered with a sinapism. It was allowed to remain on for thirty minutes ; and on visiting her in six or seven hours after its removal, I found the whole right breast considerably swollen, hot, and painful. The next morning, the enlargement of the mamma was very much increased, the tumefaction having extended to the clavicle and axilla of the irritated side. There was no hard circumscribed or prominent tumour, but a painful, diffuse, elastic distension of the mammary gland, and surrounding cellular substance. On the evening of the day next succeeding the application of the sinapism, this poor girl with much joy reported that the catamenia had appeared. The flux having continued for two or three days in moderate quantity, she then found herself greatly relieved of the headache and other most distressing symptoms; and in a week her health was so far restored, that she ceased to require any further attendance. (pp. 194 -195.)

Dr. Cormack is disposed to regard irritation of the mammæ as a convenient and rapid agency for the induction of menstruation, but one which must neither be rashly nor indiscriminately employed. In numerous cases it may be used alone, but, generally speaking, it may be advantageously combined with other means.

In cases of acute suppression of the menses, he is in the habit of prescribing, along with sinapisms to the mammæ, warm clothing of the bust and limbs, and the hot hip-bath every twelve hours.

In anæmic amenorrhœa, it need hardly be stated that irritation of

the mammæ is only calculated to do good in conjunction with, or after a course of, a metallic medicine, such as some of the preparations of iron, manganese, or arsenic. In such cases, where we can trace a monthly ovarian nisus, though there be no catamenial flow, these periods should be seized as the appropriate times for using the sinapisms, and then also we may sometimes, by venturing a few doses of forcing medicine, such as cantharides and ergot, bring the case at once to a favorable issue.

The emmenagogue effects ascribed to the application of the leaves of the ricinus communis, by Drs. M'William and Tyler Smith, can easily be understood, when we remember their irritative character, and the consequences which we have found to be induced by irritation of the mammæ caused by other stimulants.

"When the breasts," says Dr. M'William, "are small and shrivelled, the plant is said to act more upon the uterine system, bringing on the menses if their period be distant, or causing their immoderate flow if their advent be near."

In the subjoined case, related by Dr. Tyler Smith, the effect produced may have been owing partly to the application to the breasts, and partly to the application to the genitals.

"I have used," says Dr. Tyler Smith, "the remedy in a case of scanty menstruation of a remarkable kind. Owing to exposure to marsh malaria some years ago, the patient had scarcely a sign of coloured discharge at the usual catamenial periods. She used the infusion of the leaves of the red bofareira at the date of her period, applying the infusion and leaves to her breasts, and the vapour to the genitals, with the effect of producing, in two days, a considerable flow of the catamenia."

III. *The leaves of the Bofareira do not produce their Galactagogue and Emmenagogue effects in virtue of any specific property.*— The facts which have been already cited point out pretty plainly that the effect of the leaves of the bofareira does not depend upon any specific property possessed by them, but simply on the determination produced by warmth and the irritative juices which they contain. That a good deal depends upon the mere warmth of the poultices, is sufficiently obvious. Dr. Cormack has seen frequent examples in his own practice. He does not, however, enter into the particulars of these cases; but concludes by mentioning two circumstances, which thoroughly corroborate this view.

In the *Boletin de Medicina, Cirujia, y Farmacia* of 14th November, 1852, a short abstract was given of Dr. M'William's paper. In the same journal of the 19th December following, a correspondent writes to say, that in consequence of the notice which had appeared of Dr. M'William's paper, he had used fomentations of fig-leaves (*hojas de higuera*) to promote the secretion of milk in three cases, in which it had wholly or nearly ceased. In all the cases the benefit was decided. The Spanish practitioner wrote to confirm the practice recommended by Dr. M'William, but he has in reality, by using the wrong leaves, shown very clearly the galactagogue effects of poultices and fomentations, even when destitute of stimulating properties.

He likewise states, upon the authority of a Spanish lady (with whom he conversed on this subject a few days ago), that in Cadiz women are in the habit of bringing back the milk to their breasts after it has left them in consequence of weaning the child, or of any other cause, by means of drinking an infusion of the wild lupin (*altramuz*), and applying to the mammæ fomentations made with the same plant. This plant has no stimulant or irritative quality, and the efficacy of the poultices made with it must, as in the case of the fig-leaves, depend simply on heat and moisture, as in a common poultice. The internal use of the infusion might be dispensed with.

IV. *Conclusion.*—Dr. Cormack has thus made out a good plea in favour of warmth and irritation of the mammæ being regarded as powerful galactagogue and emmenagogue agencies; and he has also shown that the interesting facts recorded by Drs. M'William and Tyler Smith are not examples of specific action, but illustrations of a general principle, which may be rendered available in rational therapeutics.

Injurious effects may so readily be produced by *excessive irritation of the mammæ* upon themselves, upon the ovaries and uterus, and (as a consequence of the undue excitement of any of these organs) upon the whole system, that, in following the practice recommended in this paper, it is necessary to proceed with caution.

First, as regards the *mammæ* themselves, care must be taken not to produce too much irritation, lest troublesome inflammation be excited in them, and in the glands of the axilla;—consequences which he has seen produced in such a degree as to require, for several days, cooling lotions and general antiphlogistic measures.

In irritable subjects, or when the effects of the treatment cannot be daily ascertained, stimulating embrocations ought to be preferred to sinapisms. When sinapisms are applied every eight or twelve hours, for some days continuously—as is sometimes necessary—they ought to be compounded of two or three parts of bread to one of mustard; and a fold of soft linen ought to intervene between them and the skin. By attending to these conditions, patients will generally endure the poultice without injury for half an hour or an hour; and a greater amount of benefit will be obtained than by causing violent stimulation for a short period. It is always essential to maintain, during the intervals, great local warmth, by means of abundance of cotton wadding. If mammary irritation have been carried so far, through mistake or accident, as to necessitate recourse to refrigerating lotions and lowering treatment, it need hardly be remarked that the object for which it was used is not likely to be accomplished.

Secondly, as regards the *ovaries* and *uterus*, the effects produced upon these organs must be attentively watched; for the very greatness of the power which irritation of the mammæ exerts over these organs may constitute an element of danger. In endeavouring to excite menstruation, we must take care that we do not excite inflammation of the ovaries or of the womb. When we find the patient complaining of severe pain in the loins, and suffering from general

fever, we ought at once to discontinue mammary irritation, and prescribe rest in bed, abdominal fomentations, and the frequent use of the hip-bath. In cases of this description, as in ordinary attacks of dysmenorrhœa, we may often not only relieve pain, but accelerate a resolution of the inflammation, by administering opiate enemata.

Caution on the part of the practitioner will generally enable him to prevent or speedily remove the evils and inconveniences to which reference has been made. They may, however, so easily occur through the want of it, and lead to so much discredit and embarrassment, that the author has been anxious to give them the prominence which they deserve.

7. *Dr. Barnes upon some of the relations between Menstruation, Conception, and Lactation, and the Influence of Lactation in Causing Abortion; an inquiry founded upon an Analysis of the History of* 100 *Women.**—The author having referred to the researches of Mr. Roberton and Dr. Laycock on the subject of the influence of lactation in arresting menstruation and conception, observed, that the present investigation embraced the same objects, but was also carried to other points, and especially to the elucidation of the influence of lactation in producing abortion. Some of the conclusions drawn from his tables were at variance with those of Mr. Roberton. The first question proposed by the author was: "What was the influence of lactation in preventing or retarding menstruation?" It was found that out of 100 women 37 menstruated during lactation; that menstruation returned at variable periods of lactation, but was rarely retarded beyond twelve months. In four cases menstruation was observed during pregnancy as well as during suckling. It was also shown, that those women who menstruated during suckling were more prone to conceive. Out of the 37 women who menstruated during suckling, 24, or two thirds, conceived also; and one half of the total conceptions during lactation occurred among the 37 women who menstruated, while the remaining half fell to the 63 women who did not menstruate during suckling. Mr. Roberton, on the other hand, was of opinion that the appearance of the catamenia had no influence in disposing to conception. The next question examined was, "The influence of lactation in preventing or retarding conception?" Out of the 100 women 56 had conceived during lactation. They had in all 619 conceptions. Of these, 159, or a quarter, occurred during lactation. This result corresponds closely with those of Mr. Roberton and Dr. Laycock. With regard to the period at which these conceptions took place, it was found that 35 women had 107 conceptions under twelve months' lactation. The author endeavoured to determine the normal interval between parturition and the succeeding pregnancy in the human female, observing that this involved the question of the normal duration of lactation. He disputed the soundness of the analogical reasoning drawn by Mr. Roberton, from the custom of savage tribes, in favour of the assumption, that the normal duration was about two

* Medical Times and Gazette, Dec. 4, 1852.

years, and contended that, considering the tendency of menstruation to return after twelve months' lactation, the difficulty of retarding conception beyond that period, and other facts, that the normal period would be more properly fixed at from twelve to eighteen months. He also controverted Mr. Roberton's opinion, that the secretion of milk was the cause of the intervals of conception in the human female. The author then proceeds to state the conclusions he had arrived at in reference to the influence of lactation in causing abortion, and the mode in which lactation operated in bringing about that result. He found that the proportion of total abortions to total conceptions was 12 per cent.; the proportion of abortions following conceptions during lactation was 17 per cent., showing a large excess of abortions following conception during lactation. In discussing the mode in which lactation operated, he objected to the view advanced by Dr. Tyler Smith, that mammary irritation was the cause. He remarked, that it was an extremely rare occurrence to witness an abortion during lactation in which the mother was healthy and the ovum sound, and doubted whether simple mammary irritation was sufficient. The author's researches conclusively showed that women who menstruated during lactation and conceived, were also those who most frequently aborted. He classified the causes of the excess of abortions during lactation as follow:—1. Ovarian irritation determining menstruation. 2. Mammary irritation causing turgescence of the uterus and discharge of blood. 3. Anæmia of the mother, which may destroy the fœtus; either the degradation of the maternal blood, or the consequent inertia of her circulation, both tending to prevent the due exchange of the elements between the maternal and fœtal blood. 4. Superinduced disease of the ovum. Finally, the author adverted to the practical conclusions arising out of his investigations. He considered it clearly established that suckling should be discontinued on the occurrence of a second pregnancy; and, among other arguments, adverted to the frequency of abortions occasioned by lactation. He admitted the difficulty of determining the fact of a second pregnancy during lactation at an early period in some cases, but referred to several symptoms which he had observed not uncommonly to indicate that this had occurred. Some women are taken ill, and their milk either falls off in quantity or becomes deteriorated in quality, and the child suffers. As soon, however, as the existence of pregnancy was discovered, there could be little doubt that lactation should be brought to an end. The mother, the infant at the breast, and the fœtus in utero, must all suffer by persisting. There was another case in which the author wished to raise the question of weaning, viz., when menstruation appears during lactation. There were several considerations which weighed in favour of this course. It had been seen that women who menstruated during lactation were exceedingly apt to conceive, and, if they conceived, to abort. By weaning, the liability to conceive was not, perhaps, much increased. The fruit of a conception after weaning was much safer than the fruit of a conception during lactation. Again, it was not an unreasonable presumption that the return of menstruation was an indication that the functional activity of the mammæ was superseded by that of the

ovaries and uterus, and that the milk would be impaired in its quality. Indeed, this was a fact he had observed, that the infant at the breast mostly suffered when menstruation returned. The author expressed a confident opinion, that, as it was proved that a large excess of abortions took place among women who suckled after menstruation and conception, so a considerable proportion of this excess might be obviated by weaning on the appearance of menstruation or conception.

(The paper was accompanied by diagrammatic tables of the various subjects it embraced.)

8. *Mr. J. Baker Brown on Vaginal Cystocele, or Prolapsus of the Anterior Wall of the Vagina and Bladder, and a New Operation for its Cure.**—This condition of the vagina is not uncommon, and is sometimes mistaken for prolapsus uteri; it is generally met with in females who have passed the middle age, and have borne children.

There are three modifications of prolapsus of the vagina, viz.: prolapse of the anterior and posterior parietes of the vagina, and of its entire circumference,—the two first connected with other organs; the third occurring independently. Of the first of these, *i. e.*, prolapsus of the anterior parietes of the vagina, and of the bladder; or, as it is also called, prolapsus vesicæ, or vaginal cystocele, Mr. Brown proposes to speak.

Here the vagina, or, more properly speaking, the inner membrane only, becomes relaxed, generally from repeated child-bearing; and the urine, having been allowed to accumulate, distends the bladder, and, pushing it downwards, protrudes the yielding vagina.

Every fresh accumulation increases the distension to a greater degree, and complete prolapse through the external parts is the result.

*Symptoms.*—The patient complains of a weight and bearing down, and sensations of dragging in the lower part of the abdomen, unpleasantness in walking, and more or less dysuria,—the bladder having, to a great degree, lost its power of contraction; some patients are obliged to replace the bladder before they can evacuate the urine.

On examination, a soft, elastic, fluctuating tumour is felt at the orifice of the vagina; it is of a red or bluish-red colour; and this tumour can be greatly diminished by catheterism; the finger can be passed into the vagina below the tumour, and the os uteri be felt behind, nearly in its natural situation. The surface of the tumour, when distended, is smooth, moist, and shining; but, when the bladder is empty, it is thrown into transverse folds. There is always very considerable mucous discharge, which is exceedingly irritating to the labia and soft parts generally; and there is sometimes a very distressing irritability of the bladder, and the urine, when passed, is fetid, and contains much ropy mucus. This arises from a small portion of the urine being always left in the bladder, and, consequently, decomposition of that secretion. This subject has been lately dwelt on in an excellent paper, by Dr. Golding Bird.

* Medical Times and Gazette, April 16, 1853.

This condition may be easily distinguished from prolapsus of the uterus; it is soft and yielding to the touch, and, on introducing the catheter, the point will be felt through the walls of the tumour, towards the anus, and, on passing the finger upwards, the os uteri can be felt in its natural position; it can also be distinguished easily from prolapsus of the posterior wall of the vagina, or rectocele, or from inversion of the uterus; that condition preventing the passing of the finger into the vagina at all.

*Treatment.*—This will depend on the extent and duration of the prolapsus. If it be of recent date, and occurring in young females, the treatment should be frequent catheterism, recumbent posture, astringent injections within the vagina, such as alum, oak-bark, infusion of galls, sulphate of iron, cold water, &c., or keeping a bent metallic catheter constantly in the bladder, to which is attached an elastic bag, so that the bladder is constantly empty, and, at the same time, keeping a sponge tent within the vagina, so as to uphold the bladder. Mr. Brown has now under his care a young lady of 24, the mother of two children, who came up from the country, to place herself under his care for prolapsus of the womb, as was supposed. This patient is very considerably improved by the above-mentioned treatment, and will shortly be convalescent.

If, however, the prolapsus be of long standing, and occur in females beyond the period of child-bearing, the treatment should be more severe and radical in its nature. Some recommend plugging the vagina with pessaries, made especially for this condition; and great ingenuity has been displayed in their formation. All these contrivances, however, frequently produce so much irritation as to prevent their being used, and hence the necessity for some surgical procedure. It has been recommended to remove a slip of the mucous membrane, in the form of a triangle, the base being towards the orifice of the vagina, and bringing the edges together by sutures, thus contracting the calibre of the vagina. Others recommend the use of the actual cautery over the tumour, so as to produce a slough, and subsequent cicatrization. Another plan has recently been proposed by M. Jobert, of Paris. He encloses within two curved transverse lines, an oval space, more or less considerable, in the posterior surface of the vagina, by means of caustic, so as to form an isolated spot, repeating the application of the application of the caustic till the mucous membrane is destroyed. He then pares the edges with scissors or a bistoury, draws them together, and maintains them in apposition by means of straight needles (the points of which are removed) and a twisted suture. He operated thus on a patient in July 23, 1838, and on two others subsequently, with success.

Mr. Brown illustrates the operation he proposes for this distressing affection by the following case:—

Martha Triggs, aged 52, has had ten children. Admitted into Boynton ward, St. Mary's Hospital, February 14, 1853, suffering from a severe prolapsus of the vagina and bladder, which first began to trouble her nine years ago, after her last child. On the least exertion of walking, or standing even, or coughing in the recumbent position, the tumour comes down and extrudes through the external orifice of the vagina, to the size of a large fist. On

lifting up this tumour, when so extruded, you observe on the under and posterior surface of the os uteri, which is dragged down by the vagina, two or three ulcerated spots produced by friction against the posterior walls of the vagina. The patient can, when reclining on her back, replace the tumour herself. She has a cough from chronic bronchitis, which she generally has in winter, complains of feeling weak, and her appetite is capricious. Three years since she had an attack of jaundice, and had rheumatic fever when a child. There is a bruit at the second sound of the heart at its base. Resonance at apices of both lungs, with healthy, though rather loud breathing. She has also the arcus senilis.

This patient being a servant in place, suffered greatly from her condition, and was obliged always to wear a bandage or napkin to prevent the extrusion of the tumour; and this very support, by the friction and heat produced by its application, rather increased than diminished the inconvenience and suffering. Her spirits were depressed by this daily wear on the body, and the poor woman became an object of great pity and commiseration.

*a*, Meatus; *b*, catheter introduced and seen by dotted lines through the tumour.

The patient having been prepared for the operation by emptying the bowels, was on February 15th placed under the influence of chloroform, and then put in the position for lithotomy, each leg being held by an assistant, a third assistant holding up the tumour with Jobert's bent speculum, and pressing it under the pubis in its natural position. A piece of mucous membrane, about one and a quarter inch long and three quarters of an inch broad, was dissected

off longitudinally, just within the lips of the vagina. The upper edge of the denuded part being on a level with the meatus urinarius, the edges were drawn together by three interrupted sutures, this being repeated on the other side of the vagina. The next stage of the operation consisted in dissecting off the mucous membrane laterally and posteriorly in the shape of a horse-shoe, the upper edge of the shoe commencing half an inch below the lateral points of denudation, taking care to remove all the mucous membrane up to the edge of the vagina where the skin joins it. Two deep sutures of twine were then introduced about an inch from the margin of the left side of the vagina, and brought out at the inner edge of the denuded surface of one side, and introduced at the inner edge of the other denuded side, and brought out an inch from the margin of the right side of the vagina, thus bringing the two denuded surfaces together, and keeping them so by means of quills, as in the operation for ruptured perinæum. The edges of the new perinæum were then brought together by interrupted sutures, and the patient placed in bed on a water-cushion; two grains of opium given directly, and one grain every six hours; simple water dressing applied to the parts; beef-tea and wine for diet. A bent metallic catheter was introduced in the bladder, to which was attached an elastic bag to catch the urine. By this means the bladder was constantly kept empty. This patient progressed satisfactorily from day to day without a single bad symptom; and on the 22d the deep sutures were removed, and the

*a*, Clitoris; *b*, meatus; *c*, *c*, lateral incision; *d*, entrance of vagina; *e*, *e*, horns of perineal incision; *f*, *f*, perineal sutures; *h*, rectum denuded of its vaginal (mucous?) covering; *g*, *g*, four points of interrupted sutures.

parts found firmly united. The lateral interrupted sutures were gradually removed, and firm union found to have resulted.

*c*, *c*. Lateral interrupted sutures; *d*, orifice of vagina; *e*, *e*, quill sutures; *g*, interrupted perineal sutures.

On the 26th, the vagina was carefully examined, and the deep union found to be perfectly sound, about three-quarters of an inch thick, and the lateral wounds well contracted. The tumour could not be brought down by coughing.

*March 8th.*—The parts are all firmly healed, the patient much improved in health, with a very cheerful aspect of countenance. She can walk about without inconvenience, and no amount of exertion produces any prolapsus. She can empty her bladder with comfort, and all the leucorrhœal discharge, which was so distressing before the operation, has entirely subsided; the offensive smell of the urine has also disappeared. On passing the finger into the vagina, the os uteri can be felt easily in its normal position, and the ulcerated spots which formerly existed on its surface are healed.

On the 10th she was discharged cured, and resumed her duties as domestic servant.

*Remarks.*—It will be observed, that the object sought in this operation was the contraction of the calibre of the vagina, which, as may be imagined, was exceedingly enlarged and flabby. The first step of the

operation was the contraction of the vagina laterally, so as to prevent the tumour from falling down from above; the second step of the operation was for the purpose of contracting the vagina posteriorly as well as laterally; and, finally, adding to the extent of the perinæum, by contracting the orifice of the vagina at least two-thirds, so that, should the prolapsus not be restrained by the lateral contractions, it could not extrude beyond the orifice of the vagina, but must neces-

*a*. Clitoris; *b*, meatus; *c*, *c*, lateral vaginal sutures; *d*, orifice of vagina; *e*, *e*, perineal sutures; *f*, new perinæum; *g*, true ditto.

sarily fall upon the new perinæum. As is proved by the result, all the objects sought have been fully attained, and it is scarcely possible to imagine a more satisfactory result from any operative procedure. It will also be observed, that the benefits derived from this operation for vaginal cystocele will be equally, if not more applicable to vaginal rectocele, as well as to prolapsus of the entire vagina, and also, with some slight modifications, as to the denudation of the mucous membrane, to prolapsus uteri.

# IV.

## REPORT ON PHYSIOLOGY.

1. *M. Emil Dubois-Reymond on the Electrical Changes in Muscle during Contraction.**—It is scarcely possible to over-estimate the importance of the discoveries of Emil Dubois-Reymond in animal electricity, or to overthank Dr. Bence Jones for the succinct and intelligible version in which he has presented them to the English public. In our opinion, however, the full importance of these discoveries is only to be estimated by taking them in connection with some of the discoveries of Matteuci, and we shall therefore endeavour to give their true sense and significance by regarding them in this connection.

In speaking of the influence of *electricity* upon muscular contraction, the first thing to be determined is the electrical state of the quiescent muscle. Is this one of sensible electricity, or not? The recent researches of Matteuci, Dubois Reymond, and others, enable us to answer this question in the affirmative, and with some particularity. It is one of sensible electrical action so long as the muscle retains its irritability. The precise mode of this action has been stated differently by different observers, and Matteuci and Dubois Reymond are not quite agreed upon all points respecting it; but the researches of the latter experimentalist seem to prove that this action consists in currents which pass between the end and the side of the muscular fibre. Experimenting upon the adductor magnus of the frog, the needle of the galvanometer gave no indication of a current when the electrodes were placed in contact with the two ends simply, or the two sides simply; but it was immediately deflected when one electrode was applied to the end, and the other to the side of the muscle. This current passed indifferently from the end which happened to be in contact with the electrode, and therefore it was not absolutely and constantly of one direction in the muscle. This law was found to obtain in large muscular masses and in small fragments, even in single fibres. In the natural and undisturbed state, however, the current would seem to have one constant direction, constant at least under ordinary circumstances: thus, in the leg of the frog it is from the foot upwards; in the arm of man, from the shoulder downwards—these differences being the result of the different form and arrangement of

* On Animal Electricity, being an Abstract of the Discoveries of Emil du Bois Reymond; edited by Dr. Bence Jones, F.R.S. London, Churchill, 1852, 12mo, pp. 212.

the muscles composing the limbs, of the special currents of which muscles the general current of the limb is the resultant. This general current, however, may be reversed under extraordinary circumstances, as in the leg of the frog when frozen, of which fact the explanation would appear to be this :—The tendinous covering and termination of the muscle at all times greatly masks the electrical action of the muscle, and eventually hides it altogether when that action is weakened and extinguished by cold. Under these circumstances the innate electrical action of the tendinous tissue, which is much less acted upon by cold than that of the proper muscle, comes into play, and at a certain time becomes predominant. When this happens the relative position of the tendinous tissue changes, and it becomes more instead of less active than the muscle, a change which is quite sufficient to account for the change in the direction of the current which has place under these circumstances. This appears to be the simple explanation of this reversal; and so what Dubois Reymond calls the *par-electronomic state* of this tendinous tissue under these circumstances (from παρανομος, contrary to law) is after all quite electronomic; it is normal and not abnormal, if, as his experiments prove, the electrical action of tendinous tissue is less easily suppressed by cold than that of muscle and nerve. Under ordinary circumstances, however, the law of the electrical current in muscle is that which has been stated, namely, from the end to the side of the fibre.

The change which takes place in the electrical action of a muscle during contraction is well exhibited in several of Matteuci's experiments, and one of these shall serve to introduce the subject. Take a number of the hind legs of frogs, amputated at the hips, and stripped of their skins; arrange these limbs in a series of wine-glasses half filled with water, each limb—except the terminal ones, which hang over a single edge and are half out of the glass—being bent over the edges of two contiguous glasses, so that the thigh is in one glass and the foot in another. A foot and a thigh of different limbs are thus in every glass, and hanging out of the end glasses of the series are a free foot and thigh, which are the poles of the pile; an additional wine-glass half full of water is then provided, and the other glasses so disposed that the limb-poles may be plunged into it, and the preliminary arrangements are complete. If now these limb-poles be plunged into the additional glass, the limbs composing the pile are convulsed so long as the irritability remains, whenever the circuit is closed or broken; when closed, slightly and transitorily; when broken, violently and continuously.

In endeavouring to arrive at the signification of this experiment, we would premise that this series of limbs is a true pile or battery; each limb, like the platinum and zinc element of the battery, is a focus of force; and, as in the battery, the strength of the whole is proportional to the number of foci. Each additional limb causes an equivalent divergence in the needle of the galvanometer, or increases the amount of electrolytic action, or similarly affects the other tests of electric or galvanic activity.

What, then, is the significancy of the violent contraction which takes place when the circuit is broken, and which is repeated as long as the

muscles retain their irritability? Is it not coincident with the departure of that highly increased state of electrical tension and activity consequent upon the closure of the circuit? Any way it is not coincident with the presence of this state. This is the first impression.

What is the significancy of the slight contraction which marks the closure of the circuit, and which before long ceases to be manifested? Is not this contrary to the other? Is it not coincident with the intensified energy of the closed circuit? And if so, why does it not always accompany this state? These queries make the answer difficult. The transitoriness of this phenomenon, however, seems to require some special explanation. Its duration also, which corresponds to the shorter time during which the nerves retain their irritability, seems to connect it with some electrical change in the nerve rather than in the muscle. Now the nerve of the gastrocnemius is one of mixed fibres, of which some convey nervous impressions from the foot to the thigh, others from the thigh to the foot. *If* there is this double electrical current, it may be *presumed*, therefore, that part of it will be intensified and part neutralised on the closure of the circuit; and hence the slight and transitory contraction which takes place at this time *may* after all be due to the neutralisation of electrical action in those nervous fibres, the electrical disposition of which is opposed to the current of the pile.

It must be admitted that the researches of Dubois Reymond upon the electrical currents in nerves appear to be somewhat contradictory to this explanation. These researches go to show that these currents obey the same law as those of muscles. They set between the ends and the sides, and not between the ends only, or the sides only. They also change with the position of the nerve. Even on doubling the nerve into a loop, and placing both ends to one pole of the galvanometer, and both sides to the other pole, they set from both ends in the same direction. The law, also, is precisely the same in mixed nerves, and in purely motor and sensory nerves,—the experiment having been tried upon the ischiatic nerve of the frog, and upon the anterior and posterior roots of this nerve, and upon the optic nerve of the tench. Still these experiments are not quite free from possible fallacy. They indicate what takes place out of the body, and not that which happens in the body. The current of the detached muscle is reversible at pleasure, but the current of the attached muscle (if we may judge from what is found in the leg of the frog or in the arm of man) is only reversible under extraordinary circumstances, as when the vitality is upon the point of extinction by extreme cold or commencing death. It is quite possible, therefore, and even probable, that the electric current in the attached nerve may be equally constant; and it is not impossible, or even improbable, that the direction of the current may be different in *attached* motor and sensory nerves. Any way there is as yet no experimental evidence to the contrary.

There can be little doubt of the neutralisation of electrical energy during the violent contraction which takes place in this experiment when the circuit is broken; and there is some doubt and some probability of the same neutralisation during the slight contraction which marks the closure of the circuit. This was the inference we drew

some time ago from this and other experiments of Matteuci; and now it remains to inquire how far it is supported or opposed by the more recent investigations of Dubois Reymond upon the electrical state of muscle during contraction.

These investigations were made by means of a galvanometer of amazing sensitiveness upon muscles that had been *tetanised* by electricity, strychnia, heat, or some other proper agent,—the muscles being tetanised in consequence of the extreme difficulty of catching the true indications of the needle in any single and rapid act of contraction.

The gastrocnemius muscle of a frog with a long portion of its nerve attached, a suitable galvanometer, and an electromotive apparatus from which a series of alternating shocks may be obtained, are the materials requisite for the experiment. The muscle is placed between the poles of the galvanometer, so that its end is to one pole and its middle to the other,—the nerve is laid across the poles of the electromotive apparatus,—and the preliminary arrangements are complete. The muscle is thus included in the circuit of the galvanometer, and the needle of that instrument furnishes immediate proof of any electrical change. The nerve is under the influence of the electromotive apparatus, and by this influence the muscle may be tetanised at pleasure. The state of the needle is now to be observed before and during the tetanus. Before the tetanus it is found to be deflected by the electrical action of the quiescent muscle to some distance from zero. During the tetanus it returns to zero, or towards zero. This is Dubois Reymond's fundamental experiment.

Now this return of the needle to zero, or towards zero, is not owing to any irruption of the current of the electromotive apparatus into the circuit of the galvanometer, for this current is perfectly distinct and isolated. The electromotive apparatus, indeed, acts upon that portion of the nerve included between its poles, and this action induces action in the nerve and muscle beyond the poles, but it does not act directly upon the muscle. This is proved by the fact that any mere conductor, such as moist thread or paper, or even the nerve after its integrity is injured, is not sufficient to convey the tetanising influence to the muscle. It is proved, also, by the fact that a similar inflection of the needle takes place when the muscle is tetanised by strychnia, or by burning, crushing, or otherwise irritating the extremity of the nerve.

Nor does the needle of the galvanometer return to zero, or towards zero, in consequence of the action of a current contrary to that which has acted during the rest of the muscle. The current during rest would naturally produce such a contrary current by inducing secondary polarity in the terminal platinum plates of the galvanometer, which current would begin to operate as soon as the primary current was at rest; but this polarity was obviated in the following manner. Two amalgamated copper wires were connected with the platinum plates of the instrument, and their extremities so bent that they could easily be dipped into or removed from a small cup of mercury. When both these wires were in the mercury the circuit of the galvanometer was complete, and the polarity of that circuit immediately destroyed

if such existed; when one wire was removed the instrument was under the influence of the muscle as before. The apparatus being thus modified the former experiment is repeated. The zero point of the needle, the degree of deflection by the quiescent muscle, and the degree of inflection by the tetanised muscle, are carefully noted. The muscle is now tetanised, and while in this state the copper wires are dipped in the mercury, the galvanometer depolarized, and its needle restored to zero. The muscle being still tetanised, the wires are then removed from the mercury, and the galvanometer restored to the influence of the muscle. In this instance, therefore, the needle indicates the current of the tetanised muscle, just as in the former instance it did that of the untetanised muscle, and this indication is that the current sets *in the same direction, but not to the same degree.* The current is similar in kind but feebler in intensity. This experiment, therefore, is quite conclusive as to the nonexistence of a contrary current in tetanus, and this equally whether that current be supposed to arise in the opposite polarity of the platinum plates, or in corresponding changes in the molecular texture of the muscle itself; and it is equally conclusive as showing that the deflection of the needle towards zero during contraction is owing to an actual decrease in the electrical action previously existing.

Nor is this decrease of electrical current during contraction due to any increased resistance to conduction in the muscle during contraction, or to any change in the form of that muscle. This is shown in the two following experiments. The two gastrocnemii of a frog were arranged side by side, and in contrary directions, so that their respective currents being opposed to each other, prevented any sensible manifestation in the galvanometer. The one muscle was then tetanised when the exact current of the other immediately became manifest — a result which can only be explained by a decrease in the action of the tetanised muscle, and not by any increase in its resistance to conduction. Another muscle was fixed in such a way that no change of form could happen in contraction, but still there was the same decrease of electrical action during contraction.

A similar movement of the needle towards zero was found to exist during the muscular contraction of the living human arm. The experiment was performed by dipping the fore finger of each arm into the vessels containing the terminal plates of the galvanometer, and then contracting each arm successively, every precaution being taken to obviate the irregularities of action arising from abrasion of the skin, and other causes, by having each finger as nearly as possible in the same state. When the arms were at rest, their respective currents being opposed to each other, the needle of the galvanometer remained at zero or thereabouts; but when either arm was set in motion the needle immediately became deflected towards it, that is to say it moved from the arm which was at rest in obedience to the electrical action of that arm, and in consequence of the suspension of the opposing current in the other arm.

The needle also moved equally towards zero in cadaveric rigidity, in which case there can be no doubt that the movement is occasioned by decrease in the electrical action previously existing, for at the

supervention of this rigidity, and for ever afterwards, all electrical action is at an end.

In a word, Dubois Reymond has obtained conclusive proof that the needle of the galvanometer invariably moves towards zero in every instance of muscular contraction, whether this be primary or secondary in its character, or whether it be manifested in minute fragments, or in large masses of muscle.

Further than this, Dubois Reymond has distinctly demonstrated a similar deflection of the needle in the nervo-electrical action (of which action he was the first to obtain incontrovertible proof) during muscular contraction. This is shown by several experiments, of which the following is one :—A frog is suitably secured, and poisoned with strychnia; its ischiatic nerve is divided in the ham, and dissected out up to the vertebral column, and the lower end of this nerve is brought in contact with the poles of the galvanometer, so that the end is in contact with one and the side with the other. Before the tetanus occurs the electrical action in the nerve causes the needle of the galvanometer to be deflected some degrees *from* zero. When the tetanus occurs, the needle returns to zero, or towards zero, and again recedes during relaxation; and these movements take place regularly during every contraction and relaxation, whether these be continuous or transitory. Similar movements towards zero were caused by isolated nerves whose ends were crushed or burnt, and this equally in motory and in sensory nerves; and hence a similar conclusion—for this crushing or burning would have produced convulsion or spasm if the nerve had been in its proper position. All these experiments upon the electrical changes in nerves during muscular contraction were conducted with the same precautions as those taken in the experiments upon the muscular tissue itself, and secondary polarity or the irruption of any foreign current, had nothing to do with the movements of the needle of which mention is made.

The researches of Matteuci and Dubois Reymond seem therefore to require a complete revolution in the received views upon the theory of muscular contraction, the latter as showing that this contraction is accompanied by the disappearance of the innate electricity of the muscle, and the former as showing that free electricity induces contraction by diminishing and not by intensifying this innate electricity. These researches indeed harmonize with and furnish additional proof of the correctness of those views of muscular contraction which are advocated in the work which is referred to in the former article on the Affections allied to Epilepsy (p. 269); and as Matteuci's researches would not be complete without Dubois Reymond's, and as Dubois Reymond's would lose half their significance without Matteuci's, we owe our cordial thanks to Dr. Bence Jones, and we are sure all English physiologists do the same, for the part which he has taken, and so well discharged, of making Dubois Reymond's views public.

2. *Dr. E. Brown-Séquard on the Influence of Red-blood in restoring the Irritability of Muscles and Nerves after it has been lost for some*

*time*-*—The subjoined experiments of Dr. E. Brown-Séquard are of extreme interest. They show, not only what Mr. James Phillips Kay showed in 1834 (in his 'Treatise on Asphyxia,') that when blood is injected into a limb immediately after its irritability has disappeared the irritability will return, but they show that the same result will follow if the injection be postponed for several hours after the supervention of actual rigor mortis. They show, or seem to show, the relation of blood to muscular contraction in a new light, namely, *as counteracting rigor mortis, and by implication, muscular contraction generally.* This, indeed, as it seems to us, (though it is not recognised by Dr. E. Brown-Séquard), is what is meant, and what must be meant, by the restoration of irritability by the blood, if the word irritability has any meaning at all. It cannot be that contraction is restored, for contraction operates continuously before, and only occasionally after the operation. It may be that the opposite of contraction—fulness, pliability, relaxation, expansion, or whatever else it be called—which follows the injection, is restored by the injection, but certainly it cannot be contraction. During life, indeed, the state of the muscle is one of fulness and pliability, occasionally passing into contraction; after death it is one of permanent rigidity and contraction, the rigidity and contraction coming on soonest in muscles which are weakest. The whole history, indeed, is opposed to the idea that the contraction is in any way caused or *stimulated* by the blood.

These experiments, also, show the stimulant properties of the blood in a very wonderful point of view, and they hint the *bare possibility* that the transfusion of blood might be made a means of recalling life in death from chloroform, and in some other forms of death, not only after the cessation of all signs of muscular irritability, but after the occurrence of rigor mortis itself.

Dr. E. Brown-Séquard relates his experiments as follows :—

1st. On the body of a rabbit, in which cadaveric rigidity had already existed for ten, twenty, and in one case, thirty-three minutes, I divided the aorta and the vena cava in the abdomen immediately above the bifurcation of these vessels. By means of small tubes, a communication was established between their peripheric extremity and the central extremity of the corresponding vessels divided in a living rabbit. The blood of this living animal circulated immediately in the posterior limbs of the dead one. After about six, eight, or ten minutes, rigidity disappeared, and, a few minutes afterwards, movements took place when I excited the muscles or the muscular nerves.

2d. I have obtained a like result from an experiment more easily made than the preceding, and which I have performed more frequently. I divided transversely the body of a living guinea-pig, or rabbit, into two halves, on a level with the lower border of the kidneys, leaving no communication between the two halves, except by the aorta and the vena cava. I then tied the aorta immediately below the origin of the renal arteries. The muscular irritability gradually diminished, and in a very variable length of time† it gave way to cadaveric rigidity. I waited until rigidity had been fully developed in all the

* Philadelphia Medical Examiner, 'Experimental Researches,' by Dr. E. B. Séquard. May, 1853.

† Sometimes thirty, twenty, or even only ten minutes in weak animals, and from one to eight or nine hours in strong animals.

muscles, and then the ligature was relaxed and the circulation re-established. Rigidity disappeared slowly, and the muscles and the motor nerves resumed their vital properties.

3d. In order to ascertain if voluntary movements and sensibility could be restored to limbs that had been in a state of cadaveric rigidity, I tied the aorta immediately behind the origin of the renal arteries, in several rabbits. Shortly afterwards, sensibility and the voluntary movements disappeared in the posterior limbs. I waited until muscular irritability had given way to what is called *cadaveric* rigidity; and when that peculiar rigidity had existed for at least twenty minutes, I relaxed the ligature. Then circulation took place, and, in consequence of it, sensibility and voluntary movements re-appeared.

From this experiment it results, that not only local life, but all the properties and actions of full life, can be restored in limbs that have been in the state called *rigor mortis, cadaveric or post-mortem rigidity.*

4th. On a man, twenty years old, who was guillotined on the 18th of June, 1851, in Paris, I made an experiment similar to some of the preceding. The decapitation took place at 8 o'clock a.m. Ten hours afterwards, *i. e.* ten minutes after six o'clock p. m., the muscles of the hand, upon which I intended to experiment, exhibited some slight manifestations of irritability. At 7 and 7½ o'clock p.m. I ascertained that they had lost their irritability. Shortly after they were in a state of cadaveric rigidity.

I began the injection of blood 10 minutes after 9 o'clock p.m.

As I wished to inject fresh human blood, and as I could not obtain any from the hospitals at such an hour, I was obliged to make use of my own. My friends, Drs. F. Bonnefin and Deslauriers, drew from one of the veins of my left arm half a pound of blood, which was immediately beaten and completely defibrinated and filtered through a cloth.

As, in opposition to the general opinion, I had found that it is not necessary, in transfusion, to make use of blood at a temperature not far from that of warm-blood animals, I left the blood employed in this experiment freely exposed to the atmosphere during all the time of the operation. The temperature of the air was 19° centigr. (66°·2 Fahr.) I regret not having taken the temperature of the blood when I began to inject it, but it was probably about the same as that of the atmosphere.

The injection was made into the radial artery, a little above the wrist. The whole quantity of the blood was injected in about eight or ten minutes. The arm operated on had been separated from the body, and the blood injected came out from all the divided arteries and veins.

Having saved nearly all the blood which flowed from these vessels, I injected it anew. The last injection was made 45 minutes after 9 o'clock p.m. Ten minutes afterwards I found that cadaveric rigidity had ceased in the hand, and that two muscles only, out of the nineteen existing in that part, had not resumed their irritability. Three muscles had become so very irritable that a slight mechanical excitation was followed by a contraction in the whole length of their fibres.

At half-past one o'clock a. m.,—seventeen hours and a half after decapitation and four hours after the injection of blood,—there was still a slight irritability in the muscles of the hand.

In this experiment I found that half a pound of defibrinated human blood was sufficient to give irritability, for several hours, to seventeen of the muscles of a hand.*

* For a full account of the circumstances of this experiment, see my paper in the 'Gaz. Méd. de Paris,' t. vi, 1851, p. 421.

5th. An experiment on another guillotined man gave me more interesting results. The decapitation had taken place at 8 o'clock a. m., on the 12th of July, 1851. At 5½ o'clock p. m., cadaveric rigidity existed in almost all the muscles of the arms and fore-arms. I separated them from the body, and at 6½ o'clock I ascertained that cadaveric rigidity was increased, and that only a few muscles were still slightly irritable. At 8 o'clock p. m. (12 hours after the decapitation) the muscles of the two arms were completely deprived of irritability, and in full rigidity, and the muscles of the forearms contracted only locally under the influence of a mechanical irritation, and not at all when excited by a powerful magneto-electric current. Two other examinations made, one at 9½ and the other at 10 o'clock, gave the same results.

At 10¼ o'clock two or three bundles of fibres of one of the muscles of the fore-arm were the only parts where a mechanical excitation produced a slight local contraction, All the other muscles were perfectly stiff and deprived of irritability.

Twenty-five minutes after 10 o'clock there was no appearance of irritability remaining in any muscle.

I then began the preparations for the injection of blood, with the assistance of Drs. Martin-Magron, F. Bonnefin, Crouzet, and Mr. Moyse.

We drew about a pound of blood from the carotid of a strong dog. The blood was beaten and defibrinated before coagulation could take place in it, and 10 minutes after 11 o'clock the injection was begun. It was made in the brachial artery of the left arm, in the middle of its length, where the arm had been amputated. As soon as the blood had been thrown in the artery, some reddish spots appeared in different parts of the skin of the fore-arm, of the hand, and more particularly of the wrist. These spots became larger and larger, and the skin had the appearance it has in rubeola. Soon after, the whole surface of the skin was of a violet reddish hue. In a few minutes this colour disappeared, and was replaced by the natural hue of the skin during life. The skin became elastic and soft, as in a living man, and we saw the bulbs of its hair becoming erected and presenting the appearance called *cutis anserina*. By increasing and diminishing alternately the impulsion given to the blood, we succeeded in producing the beatings of the pulse in the radial artery. The veins were distinct and full as during life.

A short time after, the fingers, which had been extremely stiff, relaxed, and rigidity disappeared also in the other parts of the limb.

Forty-five minutes after 11 o'clock p. m., irritability had returned in all the muscles of the limb operated on. The degree of irritability, more particularly in the muscles of the arm, (triceps, biceps, and others) was very considerable, and much greater than I had seen it at the time the corpse was first examined, (about five o'clock p. m.) Irritability was still present in almost all the muscles of this limb at 4 o'clock a. m., (20 hours after the decapitation,) when I was obliged, from extreme fatigue, to abandon further investigation.

The blood injected was at 23° centig. (73°·4 Fahr.) when I began the operation, and the atmosphere was at 19¼° centig. (66°·66 Fahr.)

In this experiment, about one pound of defibrinated dog's blood gave irritability for more than five hours to all the muscles of a limb, from the middle of the arm to the hand.

6th. Every one knows the singular fact, that Vibriones and other Infusoria, when desiccated, will live when they are put into water. It is also well known that seeds, after many centuries, may grow when put in the earth. I have found something of the same kind in higher organisms; it is that muscles, in a certain condition, after having been separated from the body for many days, may recover their irritability.

Dr. Coze, of Strasbourg, has found that chloroform injected into the main artery of a limb produces instantly the strongest rigidity, and that if blood is allowed to circulate again in the limb, life appears again in it. I have gone farther, and found that if a limb, in which an injection of chloroform has been made, if separated from the body, it is able, under the influence of an injection of blood, to recover its muscular irritability 2, 3, 4, 5 and (in one case) 10 days after the rigidity was produced. I think Mr. Edouard Robin is right in admitting that chloroform prevents the chemical changes that take place in organic bodies after death, and, if it is so, we can understand why an injection of blood made so long after the limb has been separated from the body, may reproduce irritability. One day is not more than one hour, if, during it, there is no alteration produced in the muscles.

It appears, nevertheless, that chloroform does not entirely prevent the alterations of muscles, because in my experiments, I have found that the longer the limbs had been separated from the body, the greater was the quantity of blood necessary to reproduce irritability.

7th. I lately made an experiment, with the view of ascertaining how long a limb, separated from the body of an animal, may be kept alive by means of injected blood. I succeeded in retaining local life in one of the limbs of a rabbit more than 41 hours. The animal was a very vigorous, full grown one. I killed it by hæmorrhage, and, two hours afterwards, rigidity had begun in most of the muscles of the two posterior limbs, and only a few bundles of muscular fibres had still a slight irritability. A first injection of defibrinated blood was then pushed in the femoral artery of the right posterior limb. Fifteen minutes after the beginning of the injection, local life (*i. e.* irritability) was restored in the limb receiving blood, and cadaveric rigidity had disappeared.

The manner of testing this irritability was the same as that of Glisson, Gorter, and all the experimenters of the two last centuries,—I mean by mechanical excitation. I did not use galvanism, as it exhausts muscular irritability too much, as Autenrieth, Pfaff, and many other observers have shown long ago. Being aware of this fact, I have always, in my preceding experiments, made use of galvanism for a very short time only.

Three hours after the death of the rabbit, irritability still existed in the right limb (the injected one), while the left was perfectly rigid and had not the slightest irritability. Half an hour later, rigidity had begun again in the right limb; blood was injected anew, rigidity disappeared, and local life returned. From this moment until 11 o'clock, p.m. (death had occurred at 6 o'clock a.m. of the same day,) blood was injected many times. Rigidity did not return, and the vital property of the muscles was maintained. Of course the left limb, during that time, remained rigid, and had not the slightest irritability.

From 11 o'clock p.m. until 6 o'clock a.m. the succeeding day, an abundant injection of blood was made every twenty or twenty-five minutes. The irritability was not powerful, but it existed in all the muscles of the limb. There was no rigidity at all.

The injections were then made more frequently—once in each quarter of an hour—until 3 o'clock p.m., at which time I was obliged to stop them for an hour and a half.

At half past four I found the limb rigid, and only a few bundles of muscular fibres still irritable. A very abundant injection was then practised, and rigidity soon disappeared, giving way to irritability. From this time to 11 p.m., a great many injections were made, and irritability was maintained. I was then obliged to give up the experiment. At that moment irritabi-

lity was strong in all the muscles of the injected limb, except some parts of their pelvic extremities that had not received a sufficient quantity of blood.

The next morning that limb was in full and energetic rigidity. The other limb had already lost its rigidity, and had an evident smell of putrefaction. The third day after the death of the animal, rigidity was strong in the injected limb, while the other was in an advanced state of putrefaction.

If we compare these two limbs, we find, 1, that the injected one had a strong irritability at the end of forty-one hours after the death of the animal; 2, that its rigidity gave way to putrefaction only at the eightieth hour; 3, that it was in complete putrefaction only at the ninety fourth hour. The other limb was in full rigidity at the fifth hour after the death of the animal; its rigidity gave way to putrefaction at the forty-eighth hour; and it was in complete putrefaction at the seventieth hour.

From all the experiments above related, it appears that life may be reproduced or maintained in muscles and nerves by mere injections of blood. I have found, also, that life may be reproduced by the same means in the spinal cord and in the brain. I will publish these facts in another article.

It is nearly indifferent in these experiments whether we use venous or arterial blood; but it is absolutely necessary to employ red blood, *i. e.* oxygenated blood.

I have tried, sometimes, arterial blood, rendered black by the substitution of nitrogen or hydrogen for a great part of its oxygen, and I have found that such blood was unable to reproduce the vital properties of nerves and muscles.

Oxygen is necessary, either because it prevents the blood-globules from being altered, or because it acts directly on muscles, as Gustavus Liebig has found it does on their external surface, when exposed to air. I believe it is necessary for both these reasons.

I cannot say how long after the beginning of cadaveric rigidity in a muscle, oxygenated blood can reproduce local life. In the second of the two decapitated men, on whom I experimented, rigidity had existed at least five hours before the injection was begun. I believe that the stronger the animal is, the more easy it is to reproduce local life in rigid limbs by injection of blood. In limbs of weak rabbits, I have found it impossible, two hours after the beginning of cadaveric rigidity, to reproduce local life. In a very strong dog I have reproduced muscular irritability four hours after rigidity had been fully developed.

Ten, twelve, or fourteen hours after rigidity had taken place, in human limbs, I have tried in vain to re-establish local life.

I have ascertained that pure serum of blood, or milk, or albumen of eggs, are unable to produce any apparent change in rigid limbs.

The following conclusions are to be drawn from the facts related in this article:

1st. Red blood, *i. e.* richly oxygenated blood (arterial or venous) is able to revive irritability in muscles, four or five hours after these organs have lost this property.

2d. Red blood is able to revive the vital properties of nerves and nervous centres, when these properties have not been lost for more than about an hour.

3d. Muscular irritability can be maintained for more than 41 hours, by mere injections of blood, in limbs separated from the body of a rabbit.

4th. Muscular irritability may be re-established in limbs rendered rigid by chloroform for many days, even ten days.

3. *Dr. Claude Bernard on the Local Increase of Temperature resulting from the Division of the Sympathetic Nerve in the Neck.**—In experimenting upon the sympathetic nerve in the neck, Dr. Claude Bernard has recently found that the division of the trunk is followed by a remarkable increase of vascularity, temperature, and sensibility in the corresponding side of the face, and particularly in the ear, together with a complete closure of the pupil and eyelid of the same side. He has found, also, that on galvanising the upper extremity of the divided nerve the pupil dilates, the eyelids separate, the vessels empty themselves, and the increased heat and sensibility pass away. This curious experiment has also been confirmed by M. Waller, of Bonn; and to some extent anticipated, as Dr. Claude Bernard states, by M. Pourflour de Petit in 1727, who noticed the contraction of the pupil and injection of the parts surrounding the eye upon section of the sympathetic nerve in the neck on that side, and by M. Biffi of Milan, in 1846, who added to M. Pourflour de Petit's observation, by noticing that, after this division, the pupil might be made to expand by galvanising the divided nerve.

M. Budge, of Bonn, has also taken up the question, and shown that this local increase of vascularity and temperature may be caused by dividing the anterior roots of the spinal nerves immediately connected with the cervical sympathetic.

Dr. E. Brown Séquard has also taken up the question, and shown that the increase of temperature is not peculiar or constant, but that such an increase is a common consequence of injury to the nervous centres.† His remarks are worthy his growing reputation, and of the interest and curiosity of the question; and we copy them as a fit comment upon Dr. Claude Bernard's experiment.

It was known, long ago, (writes Dr. E. Brown Séquard,) that an injury to the nervous system might be followed by a partial or even a general elevation of animal heat. Sir B. Brodie says,‡ M. Chossat has published an account of some experiments on animals, in which he found that the division of the superior portion of the spinal cord produced a remarkable evolution of animal heat, so that it was raised much above the natural standard. I have made experiments similar to those of M. Chossat, and have met with similar results. I have also seen several cases in which an accidental injury of the spinal cord has produced the same effect. The most remarkable of them was that of a man who was admitted into St. George's Hospital, in whom there was a forcible separation of the fifth and sixth cervical vertebræ, attended with an effusion of blood within the theca vertebralis, and laceration of the lower part of the cervical portion of the spinal cord. Respiration was performed by the diaphragm only, and, of course, in a very imperfect manner. The patient died at the end of twenty-two hours; and, for some time previous to his death, he breathed at very long intervals, the pulse being weak and the countenance livid. At last there were not more than five or six inspirations in a minute. Nevertheless, when the ball of a thermometer was placed between the scrotum and the thigh, the mercury arose to 111° of Fahrenheit's

* Archives Génerales de Médecine, April, 1853.

† Philadelphia Medical Examiner, March, 1853; 'Experimental Researches,' by Dr. E. B. Séquard.

‡ Medico-Chirurgical Transactions, 1837, vol. xx, p. 132.

scale. Immediately after death, the temperature was examined in the same manner, and found to be still the same.

Brodie was mistaken as regards the experiments of Chossat. Instead of finding an increase in the animal heat after the section of the inferior portion of the spinal cord, Chossat found a considerable diminution in the temperature of dogs. But in two cases, where the spinal cord was divided at about the level of the last dorsal vertebra, in dogs, Chossat* found an increase in the animal heat. In one of these experiments, the increase was from 41°·1 to 41°·5 cent., (105°·98 to 106°·7 Fahr.) In the other, the increase was from 41°·1 to 42°·9 c., (105°·98 to 109°·6.)

Dr. Macartney† found an increase in the temperature of parts paralysed in consequence of the division of their nerve. H. Nasse,‡ who made many experiments on this subject, sometimes observed an elevation in the temperature of the paralysed parts after the division of the sciatic nerve, or after the partial destruction of the spinal cord.

In more than twenty experiments, I only once found an increase in the temperature of the leg of a guinea-pig, after the section of the sciatic nerve. The increase lasted about two or three days after the operation, and it was of two degrees Fahr.

After a complete transversal section of the spinal cord in the lumbar region, in birds and mammals, I found, repeatedly, an increase of one, two, or three degrees Fahr. in the temperature of the paralysed parts. I ascertained that it is not in consequence of an increase of the general temperature of the animal that such an increase exists. It is to be found only in the paralysed parts.

I never found any increase of temperature after a complete transversal section of the spinal cord, either in the cervical or in the dorsal region.

After a section of a lateral half of the spinal cord, at the level of one of the three or four last dorsal vertebræ, I have almost constantly found an increase in the temperature of the posterior limb on the side of the section. The elevation varied from one to four degrees Fahr. On the contrary, there was a diminution of from one to five degrees Fahr. in the temperature of the other leg. In some cases, in consequence of the increase of temperature on one side and its diminution on the other side, I found a difference of six or seven degrees Fahr. in the temperature of the two limbs. It is very remarkable that, together with the increase of temperature in one limb, there is an augmentation of sensibility, and with the diminution of temperature in the other limb, there is also a diminution of sensibility.

Since the publication of the results of my experiments on the sympathetic nerve, I have performed them many other times, and I have found that the result is not so constant as Dr. A. Barnard and myself had admitted. In some rabbits there was no decided increase in the vascularization and in the temperature of the face. I ought to say that, in these cases, the two ears were already warm, and very vascular before the operation. I have found, also, that generally in very cold weather the extremity of the ear of rabbits, on the side of the section of the sympathetic nerve, remains cold.

From my experiments and from the observations and experiments of Brodie, Chossat, H. Nasse, and Macartney, it results that the following opinion of Dr. Cl. Bernard is incorrect. He says: "It is known that injuries of the cerebro-spinal nervous system constantly produce a total or partial diminution in the

* Mém. sur l'Influence du Syst. Nerv. sur la Chal. Anim. Thèse de Paris, No. 126, 1820, p. 35. Exps. xxiii and xxiv.

† Treatise on Inflammation, 1838, p. 13.

‡ Vutersurchunger zur Physiol. und Pathol., 1839, v. ii, p. 190.

temperature of animals, either when a nerve has been divided or when the injury is made on the nervous centres."* He says also that an injury of the sympathetic nerve produces a very rapid increase of temperature; so that the sympathetic nerve and the cerebro-spinal nervous system are considered by Dr. Bernard as completely different, one from the other, as to the influence on animal heat when they are injured. The one should increase and the other diminish animal heat.

The truth is that these two effects—increase and diminution—may exist after an injury of either the sympathetic or the cerebro-spinal nervous system;† and, in both cases, the increase may exist, at first, and be followed by a diminution.

Before pointing out the co-existence of certain facts with the increase or diminution of animal heat, I think it necessary to establish a distinction between the cases of increase of animal heat after injuries of the nervous system.

In some cases (as those related by Brodie) there has been an increase of temperature above the natural standard of animal heat. These are very extraordinary and very rare cases, and it is not my intention to attempt to explain them here. In the cases, the degree of temperature, although increased in some other paralysed parts, has not been above the normal degree of blood heat. This is the only kind of increase of animal heat that I have observed, and this I will attempt to explain.

I have found that,—*cæteris paribus*,—the more the arteries and capillaries are dilated, the higher is the degree of temperature. This law is proved by the following facts:

1st. In all the cases of paralysis (from whatever cause) where I have found a diminution in the degree of temperature of a paralysed part, the arteries and capillaries were evidently much contracted.

2d. In the case where the temperature was normal, the blood-vessels were of their natural size.

3d. In the cases where the temperature was increased, I have constantly found the arteries and capillaries enlarged.

4th. In some cases, I have found the same changes occurring in the temperature and in the blood-vessels. The temperature at first was greater than usual and the blood-vessels dilated; afterwards both the temperature and blood-vessels became natural; and, at last, the temperature becoming lower than usual, the size of the blood-vessels became smaller.

I need not say that the changes occurring in paralysed parts in accordance with the size of the blood-vessels were the results of the differences in the amount of blood passing in these parts.

Now, it will be asked how, in certain cases of palsy, the size of the blood-vessels is larger than usual, and smaller in other cases? I cannot explain how it is so, but I can assert that it is a fact.

From the facts and reasonings related in this article, I draw the following conclusions:

1st. An injury of the nervous system may produce in the parts, which then become paralysed, either an increase or diminution of temperature.

2d. The sympathetic nerve and the cerebro-spinal nervous system appear not to be different one from the other, in this respect.

3d. The degree of temperature of paralysed parts depends on the quantity of blood they receive; and this quantity varies according to the size of the arteries and capillaries of these parts.

* Gaz. Med. de Paris, vol. vii, No. 14, p. 227.

† Vide Chossat, loc. cit., pp. 41-46.

4th. It is a fact, hitherto unexplained, that the arteries and capillaries may be either dilated, normal, or contracted in paralysed parts.

4.—*Mr. Bishop on the Causes of Impediments of Speech.**—This work contains a well-digested account of the present state of our knowledge of the physiology of voice, and of the relations of articulate sounds; but we recommend it to the notice of our readers chiefly on account of its sound practical deductions.

After having given a classification of vocal sounds, the author states the experiments of Professor Willis, which exhibit the relations between vowel sounds, and length of tube, or aperture of a sonorous cavity, and then explains the relative positions of the various vocal organs, necessary for the correct production of the various consonant sounds.

In the treatment of stammering, we think the following observations by the author are eminently entitled to the serious consideration of the medical profession:

The investigation of the causes of those defects in articulation which are usually comprised under the general terms *stammering*, and *stuttering*, has, until a very recent period, been much neglected by the medical profession: and the consequence has been, that this class of cases has fallen into the hands of uneducated empirics. Surgeons have, however, at length been aroused from this state of indifference by the energetic proceedings of Dieffenbach, Scott, Yearsley, and others. It has been supposed by these authors that stammering is the result of some abnormal condition of one or more of the organs which compose the vocal apparatus, such as the frænum linguæ, the velum, uvula, tonsils, or some of the muscles of the tongue, &c. After proposing this hypothesis, the next rational step would have been to inquire whether such hypothesis strictly corresponded with the functions of the several parts in question, in reference to the production of voice and speech. Had this been previously done, we should never have heard of the many surgical mutilations of these organs, which have taken place both at home and abroad; since, even without the attainment of anything approaching to an accurate knowledge of the normal functions of these parts, it might easily have been ascertained by a little inductive reasoning, that some of the parts which have been subjected to operations could not possibly be concerned in the production of the malady.

Independently of voice and speech, the vocal organs are more or less concerned in the functions of respiration, deglutition, and the special senses of hearing, smell, and taste. Owing to the complex apparatus of the vocal organs, difficulties of the most formidable nature present themselves in the study of their physiology and pathology, and it can therefore easily be understood how surgeons may often be mistaken respecting the causes and seat of these complaints. A little attention to the action of the vocal apparatus during the act of stammering will, however, soon enable a competent observer to discover whether the affection is entirely of a functional character, or dependent on some organic lesion of the parts concerned in the production of articulate language. When it is of the former character, we may easily see the cause of the ill success which has often attended the operations which have been performed for the relief of this defect. It is true that, in infants,

* On Articulate Sounds, and on the Causes and Cure of Impediments of Speech, by J. Bishop, F.R.S. Highley and Son, 8vo, pp. 79, 1851.

the frænum linguæ may be, and indeed often is, so short, that they are unable to grasp the nipple of the mother, and consequently requires to be cut; but it is rarely so short as to prevent the tip of the tongue from touching the roof of the mouth; and if the letters *d*, *t*, *n* can be sounded, the point of the tongue has sufficient mobility for articulate speech. It may also be easily understood that, if stammering depended on malformation of some of the muscles of the tongue, as was supposed by Dieffenbach, the defect would be permanent, and consequently, the stammerers would not at one moment be able, and at the next unable, to articulate the same words, as is well known to be often the case.

It has been supposed by some that the tonsils are instrumental in the production of stammering. The tonsils may, it is true, affect both the pitch, and the quality of the voice, but these results are entirely independent of stammering. They may, indeed, be so much enlarged as to impede deglutition, and block up the internal passages to the ears; or they may be ulcerated, and involve the surrounding tissues, but still without producing any sensible effects on the articulation. The velum is under the control of the voluntary muscles; and, if it should be found on investigation to be instrumental in the production of stammering, it may easily, by a method which will presently be described, be made to act so as to keep the vocal tube open. The uvula cannot close the vocal tube in speaking, and consequently cannot be concerned in producing the defect of speech under consideration.

It has been truly remarked by Sir Charles Bell that for the production of the most simple sound, or the articulation of a single word, the consent of a great number of organs is necessary. Dr. Arnott also observes, that command over the organs of speech is acquired in the same manner as over all the muscular organs of the body; as, for example, in walking, skating, fencing, and performing on musical instruments. Agreeably to this view, it will be found on analysis, that want of synchronous and appropriate action of each part of the vocal mechanism concerned in speech, is essentially and fundamentally the cause of stammering. The most common cases of stammering occur, when persons attempt to articulate the desired sounds without putting the glottis into vibratory action; and, therefore, in order to remove this kind of impediment, the treatment consists in instructing and exercising the patient in the method of using the vocal apparatus properly. To effect this purpose, it is necessary to direct the patient to vocalize the breath so as to utter a continuous sound, as by singing a note in music. This he should do, in the first place, without making any attempt to articulate a syllable; and then, on repeating the same sound, should endeavour to articulate the word required. This he would be enabled to do immediately, if, during the whole time that the attempt is made to pronounce the articulate sounds, the glottis is kept in action by the vocalization of the air issuing from the lungs, and the articulating apparatus performs the necessary actions. In this manner the patient will be enabled to overcome, on the first trial, some of the difficulties of articulating at will.

In confirmation of the foregoing statement, it is a notorious fact that such persons, if they happen to be vocalists, can articulate with fluency during the act of singing, and hence we need no stronger proof of the defect having its origin in functional causes alone, and not in any malformation of the organs of voice. The painful configurations, and spasmodic contortions of the mouth and face are produced, in consequence of the stammerer attempting to articulate with unvocalized breath: these have been ascribed to a choreal state of the vocal organs; they may, however, be often traced directly to an imperfect combination, rather than to a want of voluntary control over them. By

pursuing the plan above described, no difficulty is experienced in making the worst stammerer utter whole sentences uninterruptedly; and, after a few lessons, the most illiterate persons may be taught how to articulate with facility.

Cases have been described in which the motions of the tongue are said to have been restricted by the genio-hyo-glossi muscles; and it has been asserted by Amussat, and others, that the division of the genio-glossi portions has been attended with apparent relief. There is most probably some fallacy in these views, and the power of articulation should always be tested on the principles already described, before any attempt is made to relieve the defect by operating with the knife. When we reflect on the severity and gravity of the methods pursued by Dieffenbach for the relief of stammering; which consist either in the division of the muscles of the tongue at its root, cutting at the same time through the linguales, genio-hyo-glossi, and stylo-glossi muscles, with their bloodvessels, and nerves; or in cutting a transverse wedge-shaped slice out of the dorsum of the tongue, we may easily conceive the danger of hæmorrhage, and sloughing, which must result from such operations. It appears, indeed, to be wholly unjustifiable for surgeons thus to inflict wounds, and mutilate organs, upon mere hypothesis, more especially when the practice is at variance with the physiology of the parts concerned in the defects of speech intended to be relieved.

The author further remarks: "It is, however, by no means a matter of so much indifference as many persons appear to suppose, whether we have, or have not, such parts appended to the vocal organs as the tonsils, velum, and uvula;" and then quotes cases in which the compass of the voice of singers has been materially reduced by extirpation of the tonsils.

In treating of the causes of stammering, the author remarks:

The most frequent cause of stammering is the imperfect education or training of the organs of articulation, and a deficiency in that sympathetic association which ought to subsist between the articulating and vocalizing organs.

Drs. Arnold, Müller, and Schulthess agree in considering the cause of stammering to be a spasmodic affection of the glottis producing a momentary closure of the rima glottidis. Müller, however, remarks very properly, that "it must be remembered as a principle, that the momentary spasm depends *entirely on a morbid association of the movements of the muscles of the larynx with the movements of articulation.*" We here observe that this definition is at variance with the idea of spasm of the glottis; for irregular voluntary association of actions does not constitute spasm, and the repetition of *ha-ha-ha-have*, is the voluntary attempt to overcome the difficulty, as likewise in the examples of *g-g-g*, *l-l-l*, *t-t-t*, and *b-b-b*, in which the impediment is caused by the organs articulating those letters, the glottis remaining mute, but not spasmodically closed. In fact, Schulthess is quite correct in saying that the repetition of the same sound in stammering is merely a series of attempts to overcome the difficulty, as *l-l-l-laughing*, *t-t-t-take*, *b-b-b-better*.

We will conclude by remarking that the author has ably investigated the causes and appropriate remedy of the distressing loss of voice frequently experienced by clergymen, barristers, and other public speakers, for which we must refer our readers to the work itself.

5. *MM. Medicus and Physiologus on the Development of Intestinal Worms.**—The following clever and amusing summary of our present knowledge upon the development of intestinal worms, which forms a part of one of the *Colloquia de omnibus rebus*, will supply a useful wrinkle to those who have not been fortunate enough to hear or read the lectures of Professor Owen, and an agreeable reminder to those who have been so fortunate.

*Medicus.* But what do we really know of the production or reproduction of tænia?

*Physiologus.* If you had read a memoir which I have been lately reading, you would have known something about it. The author maintains that intestinal worms are neither more nor less than a more advanced stage of development of the *cysticerci*, that, infest the flesh of animals used as food. He has traced the tapeworm of the cat to the *cysticercus* of the mouse.

*Medicus.* But how will that account for this tapeworm forming in man, who roasts, boils, broils, or fries all his cysticerci, before making a meal of them?

*Physiologus.* Nevertheless this memoir appears to me an important addition to our knowledge of the development of intestinal worms. Among the authors on this subject, Professor Siebold was, I believe, the first to state from observation, that the *cysticercus fasciolaris* found in the liver of the mouse, reaches its final state of development in the intestines of the cat, and is there transformed into the *Tænia crassicollis.* This statement was confirmed by a series of observations by Dr. Henry Nelson, who, in his thesis, presented to the University of Edinburgh in 1850, carefully traced and figured the various stages through which the tapeworm of the cat passes. The reproductiveness of the animal exceeds even that of fishes, for each joint appears to contain 125,000 ova, which will give about $12\frac{1}{2}$ millions for the entire worm. The minute ova, thus passing off in incalculable numbers with the fæces, enter the body of the mouse mixed with its food and drink, or through the intervention of its furry coat, to which they adhere, and which it is in the habit of licking. It does not precisely appear how they pass from its alimentary canal into its liver, but most probably this is through the medium of the blood. Arrived in the liver, they are swallowed by the cat, and in its alimentary canal are converted into tapeworms—the *Tænia crassicollis.*

*Medicus.* It is easy enough to see how the mouse's cysticercus may become a feline tænia; but not conversely how the cat's tapeworm produces the cysticercus of the mouse. Do you think it in the slightest degree probable that so cleanly a creature and so dainty a feeder as the mouse, would eat cat's dirt, or "dip his whiskers or his tail in" such an abomination.

*Physiologus.* No, but the dirt may be converted into dust so impalpable as to escape the observation of the most fastidious of mice.

*Medicus.* A dried up ovum is not more likely to thrive than a roasted cysticercus.

*Physiologus.* I don't admit the analogy between objects so dis-

* Edinburgh Monthly Journal, June, 1852.

similar in size as a cysticercus half an inch long, and the ovum of a tænia $\frac{1}{3000}$th of an inch in diameter. But at any rate we have now got a cat's tapeworm made out of a mouse's cysticercus. This result has been very lately extended to the tapeworms of other animals by Dr. Küchenmeister—[*Prag. Vierteljahrschrift*, 1852, i, 126]. He fed dogs and cats upon parts of animals which contained different kinds of cysticerci, and subsequently found tapeworms in their intestinal canal at various stages of development, according to the interval allowed to elapse after the cysticerci were devoured. Every precaution seems to have been used in these experiments, one of which may be cited. An old dog was frequently purged, for a period of six or eight weeks, with caster oil, to ensure that no tapeworms should be present. He then ate food containing ten cysticerci; in seven days ten more; and in six days more several others, which were not counted. Nine days afterwards the dog was killed; and there were found in the intestines thirty-five tapeworms, varying from a sixth of an inch in length, and with scarcely visible joints, to well-developed worms of 160 joints, and fifteen inches long. Similar results were obtained with cats. Dr. Küchenmeister, however, could not find any tapeworms in dogs fed with the liver of the mouse; but when he fed cats with the same liver, their intestines contained the *Tænia crassicollis*. It would appear, therefore, that each species of cysticercus requires a certain habitat, a peculiar animal, for its development. It has been rendered highly probable that the *Cysticercus fasciolaris* of the mouse is transformed into the *Tænia crassicollis* of the cat, the *C. tenuicollis* of the squirrel and ruminant animals into the *T. serrata* so common in the dog, and the *C. pisiformis* of the hare and rabbit into the *T. crassiceps* of the fox.

As for the human tapeworms, Eschricht has rendered it highly probable that the *Bothriocephalus latus*, which occurs in man in Russia and some other countries, is the further development of a species of *Ligula*, which infests the flesh of the dorse and other fishes of the Northern seas. The origin of the *Tænia solium*, the only tapeworm met with in this country, is most probably the *Cysticercus cellulosæ*, which inhabits the flesh of various animals, and especially the pig and sheep. Dr. Nelson at least points out the following reasons for this opinion. In both, the neck is attenuated. In both the body gradually increases in size downwards. In both the head is similar, the figures given of them by Bremser being identical; and in particular both heads have a double circle of hooks; and although the *Tænia solium* is sometimes seen without hooks, Bremser has proved this to be the result of age, one row dropping off first, and then also the other.

It is not so difficult as you [*to Medicus*] suppose to account for the admission of living cysticerci into the human intestines. Passing by the remarkable fact, that tapeworm is nowhere so common in the human subject as in Abyssinia, where meat is habitually eaten in the raw state,—and also setting aside as doubtful the alleged power of the cysticerci to resist an elevated temperature, because in that case tapeworm should be as common in Britain as in Abyssinia,—we know that there are many people who prefer their meat in a very underdone

state, and few are on their guard against a partial error of the cook in this respect.

In regard to the importance of obtaining the tapeworm's head, when the worm is expelled by remedies, it must of course be allowed to be extremely difficult to discover in the fæces so minute an object as the head of the *Tænia solium*. But this does not affect the importance of its expulsion as a guarantee of a radical cure. Late anatomical researches rather confirm the prepossessions of physicians in favour of getting a sight of the head, if possible. Thus Van Benedin has shown, that the head is the part from which all the joints are thrown off by gemmiferous reproduction; those formed first being pushed downwards by the formation of others, and being further developed as they descend. He considers a tapeworm as a compound fluke-worm, the whole consisting of three stages or states of growth:—1st, the cystic head (scolex); 2d, the compound tapeworm (strobila); 3d, the separated joints (proglottis). And Dr. Nelson has ascertained that the four suckers of the head of the worm contain each a canal, which afterwards unite to form the two lateral canals of its body; and he describes the manner of feeding and propulsion of the contents of these canals from the head to the tail. The head is therefore important on two accounts,—first, as the means by which the animal is nourished; and secondly, as the basis on which the joints are produced. Van Benedin, indeed, supposes that when the tail-joints separate, as they often do, they may themselves go on developing, and become a species of fluke or *Distoma*. But this view is far from being established.

*Editor.* It is to be hoped that these results will stand the test of time. It is gratifying to see the dry anatomical researches of Rudolphi, Bremser, and others, giving forth useful results at last.

*Physiologus.* Those foolish people in our profession who so eagerly search only for what they call practical information, may rest assured that, in the long run, the cultivation of pure science is the surest and best way of arriving at it. No one could have expected, when Galvani made the limbs of a decapitated frog caper, and when practical men got no answer to their question, *cui bono*,—that England and France would one day be united by a galvanic telegraph. Nor could it have been imagined that the apparently barren labours of Goetze, Rudolphi, and others, would lead to the important practical fact, that tapeworm is caused by feeding on measly meat and fish out of season, or by indulging in the heathenish custom of devouring half-raw flesh.

6. *Dr. E. Brown-Séquard on the Cause of Hybernation in the Tenrec;—an Investigation showing that Cold and not Heat and Dryness is the Cause.**—The influence of cold as a cause of hybernation has not been considered essential, on account of an assumed fact, which is altogether incorrect. This fact is that a mammal called the Tenrec (*Erinaceus ecaudatus*, Linn.), which lives in the Islands of Mauritius, of Madagascar and Bourbon, is torpid under the joined influences of warmth and dryness. Cuvier says, about the Tenrec: "They are

* Philadelphia Medical Examiner, 'Exp. Researches,' by Dr. Séquard, Sept. 1852.

nocturnal animals, remaining in lethargy three months each year, although they inhabit the torrid zone. Moreover, Bruguiere asserts that it is during the time of the greatest heat that they are torpid." Physiologists have admitted this fact as true, and they have supposed that warmth and dryness could be, like cold, a cause of torpidity.

The following facts prove that the torpid sleep of the tenrec takes place from precisely the same cause as that of the hedge-hog (*Erinaceus Europeus*, Linn.), and of other hybernating mammals :—

1st. The tenrec and the hedge-hog belong to the same family, and they are both much alike.

2d. According to MM. Desjardins, Telfair, and Coquerel, and to my own observations, the tenrecs earth themselves, and are torpid from the month of June to the month of November, *i. e.*, during the winter season of the islands where they live.

3d. Hybernating animals, belonging to varied species, observed by Pallas, Mangili, Marshall Hall, Berthold, Barkow, and myself, have been found torpid at the temperature of 61 to 66° F. (16 to 19° Cs.) Moreover, I have found that dormice (*Mus. glis.*, Linn.) even at a temperature of 68 to 72° F. (20 to 22° Cs.) may become torpid, and I have observed some that were constantly sleeping, during a whole week, at a temperature varying from 59 to 68° F. (15 to 20° Cs.) I have stated that hedge-hogs may be torpid during the summer; in Paris, at a temperature of 68 to 72° F. (20 to 22° Cs.) and lately, in Philadelphia, I have seen a marmot (*Arctomys monax*, Buff.) torpid, in June, at a temperature of 71 to 73° F. (21·5 to 23° Cs.)

4th. During the time of its torpidity, the tenrec is under the influence of a temperature of 59 to 72 or 73° F. (15 to 22 or 23° Cs.) rarely more, and sometimes less. Therefore these animals are exposed to a temperature sufficiently low to render them torpid, for that temperature may produce that effect on the hybernating animals of cold countries.

From these facts I believe it is right to conclude that torpidity is induced in the tenrec, in the same way as in the other hybernating mammals, and therefore it is not necessary to suppose that warmth and dryness produce torpidity.

C. B. R.

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# INDEX TO VOL. XVII.


PAGE

Abdomen, case of sudden enlargement of the, during pregnancy . 186
Abdominal aorta, case in which this vessel was tied . . 148
ABRAHAM, Dr., on oxygen as an antidote for syncope from chloroform 127
Amputation, on immediate, after injuries . . 126
at the shoulder-joint, American statistics of . . 163
at the hip joint . . . . 164
ANDERSON, Mr., a case of tracheotomy in epilepsy . . 51
Aneurism, cases of, treated by compression . . . 113
treated by galvano-puncture . . . . 119
of bone, case of . . . . . 123
treated by injecting solution of perchloride of iron into the sac 292
new mode of operating in varicose . . . 293
Aorta, diagnosis of aneurism of . . . . 79
Arcus senilis *v.* fatty heart . . . . . 79
ARGUMOSA, M., a new operation for hydrocele . . . 156
ARNETH, Dr., on the statistics of forceps-operation . . 193
Arteries, statistics of operations on large . . . 112
Artificial anus, case of . . . . . 149

BABINGTON, chlorate of potash in cancrum oris . . . 81
BARCLAY, Dr., on cinchonism in fever . . . 9
BARLOW, Dr., opium in certain cases of constipation . . 86
BARNES, Dr., on fatty degeneration of the placenta and its consequences 190
on the relations between menstruation, conception, and lactation, and the influence of lactation in causing abortion . 329
BECQUEREL, M., composition of milk in health and disease . . 208
BENNETT, Dr. RISDON, on pleuro-pneumonia . . . 71
BERNARD, M. CLAUDE, on the effects of dividing the sympathetic nerve in the neck . . . . . 348
BIRD, Dr. GOLDING, on prolapsus vagina as a cause of phosphatic urine 94
on urinary deposits . . . 272
Birth, hour of, in 2019 cases . . . . 188
BISHOP, Mr., on deformities . . . . . 286
on the causes of impediments of speech . . 351
Blood-fibrin in relation to disease . . . . 73
BÖHMER, on syphilitic affections of the liver in children . . 233

PAGE

Boinet, treatment of aneurism by galvano-puncture . . 119
Bolton, Mr., chloroform in puerperal convulsions . . 206
Bone, on some painful affections of . . . . 123
Bowels, on obstruction of the . . . . 151
Breast, discharge of fluid in innocent tumours of . . . 215
Bronchitis of children, removal of mucus in the suffocative . . 233
Brown, Mr. J. B., on rupture of the perinæum . . . 211
on a new mode of operating for ovarian dropsy . 221
on a new operation for vaginal cystocele . 331
Buchanan, Dr., case of excision of the head of the femur . . 166
Burrows, Dr., hemiplegia caused by plugging of a cerebral artery . 32
Butcher, Mr., treatment of fractures of the femur by a modified splint 176

Cæsarian section and premature abortion . . . 200
cases of . . . . . 201
Calculi, on the solution of urinary . . . . 154
a new operation for extracting, from the membranous portion of the urethra . . . . . 153
Cancer, statistics of operations for . . . . 110
Cancrum oris, chlorate of potash in . . . . 81
Cane, Mr., case of tracheotomy in epilepsy . . . 51
Carnochan, Dr., case of elephantiasis arabum, and cure by ligature of the femoral artery . . . . . 178
Carpenter, Dr., on epidemics . . . . 4
Carrière, Dr., anæsthetic inhalations in certain affections of the chest 67
Carter, Mr. Brudenell, on the pathology and treatment of hysteria 321
Chalmers, Dr., on the treatment of snake-bites by stimulants . 293
Chapman, J. W., on the treatment of obstinate ulcers and eruptions of the leg, without confinement . . . . 183
Chambers, Dr., statistics of tuberculosis . . . 21
Channing, Dr., case of sudden enlargement of the abdomen during pregnancy . . . . . 186
Chassaignac, M. on the removal of foreign bodies from the cornea . 134
Chest, anæsthetic inhalations in certain affections of . . 67
Chiari, M., case of Cæsarian section . . . . 206
Chloroform in rheumatism . . . . . 20
in tetanus . . . . . 63
in phagedænic ulcers . . . . 111
oxygen as an antidote for syncope from . . 127
in puerperal convulsions . . . . 206
as a preventive of puerperal mania . . . 207
in certain cases of retention of urine in children . 236
on the treatment of syncope from, by inversion of the body 296
Christen, Dr., on collodion in smallpox and erysipelas . . 103
Christison, Dr., curious case of gunshot wound of the lungs . 146
Cholera to animals, communicability of . . . 12
in an English village . . . . 14
on mercury in . . . . . 15
cramps, on the stoppage of . . . . 16
Cinchonism, on, in fever . . . . . 9
Clarke, Mr. Lockhart, case of tracheotomy in epilepsy . . 52
Clavicle, fracture of the, an instrument for treating . . 145
Clertan, M., on scleroma in newly-born infants . . 229

PAGE
Coates, Mr., on a case of aneurism treated by compression . 118
Cock, Mr., on a case of aneurism treated by compression . . 117
Cogswell, Dr., on the action of hydrocyanic acid on the larynx . 65
Collodion in smallpox and erysipelas . . . . 103
Constipation, opium in certain cases of . . . 86
Cooke, Mr., on the mental epidemics of children . . . 230
Cormack, Dr., on the galactagogue and emmenagogue effects of warm applications to the mammæ . . . . 322
Cornea, on the removal of foreign bodies from the . . 134
Crawford, Dr., on an instrument for treating fracture of the clavicle 145
Crisp, Dr., on aneurism of the aorta . . . . 79
on perforating non-malignant ulcers of the stomach . 83
Croup, tracheotomy in . . . . . 67
Curling, Mr., case of artificial anus . . . . 149

Davey, Dr., on insanity . . . . . 22
Davieri, Dr., iodide of potassium in syphilis . . . 161
Deane, Mr., mechanical support in prolapsus ani . . 152
Decæne, Dr., cases of Cæsarian section . . . 201
Deformities, on the pathology and treatment of . . . 286
Demarquay, M., a new operation for extracting calculi from the membranous portion of the urethra . . . 153
Des Granges, M., on a new mode of treatment in prolapsus uteri . 217
Deslongchamps, M., on the treatment of aneurism by perchloride of iron injections . . . . . 292
Diabetes, on rennet in . . . . . 275
Dislocation of the eye, case of . . . . 133
Diuretics, on the action of . . . . . 272
Donders, M., on the eye and speculum in the diagnosis of eye-diseases . . . . . 128
Du-bois Reymond, M. Emil, on the electrical changes during muscular contraction . . . . . 337
Druitt, Dr., on natural degeneration of the placenta . . 191
Dundas, Dr., on cinchonism in fever . . . . 9
Dusch, Dr., chloroform in tetanus . . . . 63

Ectropion, double, new operation for . . . . 127
Egan, Dr., on mercury or no mercury in syphilis . . 157
on the revelations of the speculum in cases of gonorrhœa in females . . . . . 216
Electricity as a remedial agent . . . . 254
Elephantiasis arabum, case of, cured by ligature of the femoral artery . 178
Emmenagogue, warm applications to the mammæ . . 322
Epidemics, influence of noxious effluvia on . . . 4
predisposing causes of . . . . 2
Epilepsy, on posture in . . . . . 48
cotyledon, umbilicus in . . . . 56
on the influence of day and night in . . . 60
questionable importance of aura in . . . 61
on the pathology of affections allied to . . . 256
on the treatment of . . . . 256
Epileptics, sugar in urine of . . . . 91
Erysipelas, iodine applications in . . . . 105
collodion application in . . . . 103

PAGE

EVERTS, Dr., on the influence of day and night in epilepsy . 60
Eye speculum, in diagnosis of eye diseases . . . 128

Femur, cases of excision of the head of the . . . 166, 170
sequel to a case of excision of the head of the . . 175
on the treatment of fracture of, by a modified splint . 176
Fever, opium in certain cerebral symptoms of . . . 28
FLEMING, Dr., obstruction of the urethra as a cause of vesical irritability in children . . . . . 234
Forceps-operations, observations and statistics of . . 193
Forceps, on the use of the, in difficult labour . . . 305
on the advantage resulting from a timely use of the . 312
FORSTER, Dr., a case of poisoning by strychnia . . . 62
Fractures, a new method of treating . . . . 120
compound, treatment by "occlusion" . . 122
of the femur, treated by a modified splint . . 176
(compound) of the leg and thigh, some American statistics of 182
case of spontaneous fracture of the thigh bone . . 304
FRANCE, Mr., case of paralysis of the third nerve . . 132
Furunculoid epidemic . . . . . 19

Galactagogues, warm applications to the mammæ as . . 322
GAY, Mr., on the operation for cleft-palate . . . 140
on the dangers of the taxis . . . . 297
GENDRIN, M., on the influence of the puerperal state in the prevention of disease . . . . . 207
Gestation (extra-uterine), cases of . . . . 211
GILLESPIE, Dr., on scarlatina . . . . 18
Glottis, on spasm of the . . . . . 232
Gonorrhœa, on a new way of treating . . . . 161
treatment by copahine-mège capsules . . . 161
in women, revelations of the speculum in cases of . 216
GRAINGER, Mr., on epidemic disease . . . . 1
GRAVES, Dr., on cotyledon umbilicus in epilepsy . . . 56
GRAY, Dr., on rennet in diabetes . . . . 275
GRIEVE, Dr., on cotyledon umbilicus in epilepsy . . . 56
GUISARD, Dr., on chloroform in certain cases of retention of urine in children . . . . . 236
GULL, Dr., on electricity as a remedial agent . . . 254
GUTHRIE, Mr. C. G., case of amputation at the hip-joint . . 164
Gutta percha, in certain dislocations and fractures . . 121
GUYON, M., on the cure of cholera cramps . . . 18

Hæmorrhage during separation of the placenta, on the source of . 315
HALL, Dr. MARSHALL, on muscular "tic" . . . 47
on posture in epilepsy . . . 48
cases in which tracheotomy may be required . 49
a case of hidden seizure . . . 59
HAMILTON, Dr., on provisional callus . . . . 122
on the advantage resulting from a timely use of forceps 312
HAMMOND, Dr., potash in scurvy . . . . 77
HANCOCK, Mr., chloroform in phagedænic ulcers . . . 111
HARNIER, M., case of Cæsarian section . . . 205

PAGE
Harris, Dr., effect of continued exposure to turpentine vapours . 96
Hassall, Dr., on a case of sarcina ventriculi . . . 81
on the development of torulæ in the urine . . 88
Heller, M., on albuminous urine in various diseases . . 88
Hemiplegia caused by plugging of a cerebral artery . . 32
Herpin, M., on the aura epileptica . . . . 61
on the application of nitrate of silver in acute tonsillitis . 142
on the treatment of epilepsy . . . 256
Hervieux, M., the effects of posture upon the mortality in foundling hospitals . . . . 227
the purulent diathesis in newly-born children . 228
Hip-joint, amputation at the . . . . 164
Hodgson, Mr., case of hypertrophy of the tongue . . 137
Holt, Mr., treatment of ulcers by exclusion of the atmosphere . 110
Hooper, Dr., peculiar case of hæmaturia . . . 98
Horner, Mr., on immediate amputation after injuries . . 126
Hoskins, Dr., on arcus senilis *v.* fatty heart . . . 79
Hubert, Prof., Cæsarian section in premature abortion . . 200
Humphrey, Mr., case of hypertrophy of the tongue . . 137
Hunt, Mr., on scald-head . . . . . 101
Hutchinson, Mr., on an air-compressor for the testicle . . 156
Hydrocele, a new operation for . . . . 156
Hydrocyanic acid, action of, on the larynx . . . 65
Hydrophobia, some statistics in . . . . 38
Hysteria, on the pathology and treatment of . . . 321

Inflammation, sketch of low . . . . 106
Inoculation in epizootic pneumonia . . . . 64
Insanity, on proximate cause of . . . . 22
vital statistics of . . . . . 24
Iodine injections into joints . . . . 125

Jameson, Dr., dislocation of the eye . . . . 133
Joints, iodine injections into . . . . 125
Jones, Dr. Bence, on the solution of urinary calculi . . 154
Jones, Mr., on a case of excision of the head of the femur . . 170
Jozeau, M., on copahine-mège capsules . . . 162

Kirby, Dr., chloroform in rheumatism . . . 20
rapid cure in sciatica . . . . 37
Kuchenmeister, Dr., on the action of anthelmintics . . 271

Labour, induction of premature labour before the 7th month . 198
Lactation, influence of, in causing abortion . . . 329
Landgraf, Dr., impeded respiration as a sign of cerebral inactivity . 32
Langley, Dr., case of extra-uterine gestation . . . 214
Lederer, Dr., on spasm of the glottis . . . 232
Lee, Dr. R., on the induction of premature labour before the 7th month . . . . . 198
Lesueur, M., on gutta percha in certain dislocations and fractures 121
Lever, on the syphilitic affection of the liver in children . . 233
Lizars, Mr., on a new mode of operating in varicose anuerism . 293
Lungs, curious case of gun-shot wound of the . . . 146

PAGE

M'Donnell, Dr., on a case of encysted tumour treated by puncture and cauterisation of the interior . . 109
on a novel and rhino-plastic operation . . 135
M'Cormack, Dr., on the furunculoid epidemic . . . 19
Mackarsie, Mr., a case of tracheotomy in epilepsy . . 52
Mackensie, Dr., on the pathology of phlegmasia dolens . . 269
on the source of hæmorrhage during separation of the placenta . . . . . 315
Malgaigne, M., on lateral deviation of the great toe . . 184
Marshall, Mr., on communicability of cholera to the lower animals . 12
Melsens, M., on the treatment of slow mercurial and saturnine poisoning by iodide of potassium . . . . 249
Mental epidemics of children, on the . . . . 230
Menstruation, conception, and lactation, relations between . 329
Mercurial poisoning (slow) treated by iodide of potassium . 249
Mercury or no mercury in syphilis . . . . 157
Miasmata, action of ozone on . . . . 5
Michea, M., on sugar in the urine of epileptics . . . 91
Milk, composition of milk in health and disease . . . 208
Milton, Mr., on a new way of treating gonorrhœa . . 161
Mirault, M., new operation for double-ectropion . . 127
Monro, Mr. a case of aneurism treated by compression . . 116
Monteiro, Dr., a case in which the abdominal aorta was tied . 148
Mountain-sickness, cause of . . . . 19
Muscular "tic" . . . . . 47
contraction, on the electrical changes during . . 337
irritability, on the power of red-blood in restoring lost . 342
Murphy, Dr., on the use of the forceps in difficult labour . 305

Nelaton, M., on the treatment of syncope from chloroform by inversion of the body . . . . . 296
Nervous irritability, on the power of red-blood in restoring lost . 342
Neuralgia, on epileptiform . . . . . 36
Norris, Mr., on iodine in erysipelas . . . . 105
Norris, Dr., on some American statistics of compound fractures of the leg and thigh . . . . . 182

Oldham, Dr., case of polypus uteri . . . . 220
Operative ophthalmic surgery . . . . 279
Opium, in certain cerebral symptoms of fever . . . 28
Ormerod, Dr., on some points in rheumatic and non-rheumatic pericarditis . . . . . 76
Ovarian cysts, on the position of the patient during tapping for . 223
on inflammatory and non-inflammatory rupture of . 225
dropsy, new mode of operating in . . . 221
Owens, Dr., case of Cæsarian section . . . . 206
Oxygen as an antidote to syncope from chloroform . . 127
Ozone, action on miasmata . . . . . 5

Paget, Mr., on statistics of operation for cancer . . . 110
Palate, operation for cleft- . . . . . 140
Parkes, Mr. P., on some painful affections of the bone . . 123

PAGE

PARKES, Dr., remarkable case of fracture of the processus dentatus . 142
on the action of liquor potassæ upon healthy urine . 92
on the treatment of slow lead and mercurial poisoning by iodide of potassium . . . . . 249
Paralysis of the third pair of nerves, case of . . . 132
PASTORELLA, M., on scleroma . . . . 229
Pelvic cysts (sanguineous), on . . . . 225
Pericarditis, on some points in rheumatic and non-rheumatic . 76
Perinæum, on treatment of rupture of the . . 209, 211
PHILLIPS, Mr. BENJAMIN, on two cases of aneurism treated by compression . . . 113
on obstruction of the bowels . . 151
Phlegmasia dolens, on the pathology of . . . 269
Phosphene, on . . . . . 130
Phthisis, the relation between hysteria and . . . 64
Placenta, on fatty degeneration of, and its consequences . . 190
natural degeneration of the . . . . 191
prævia, cases of . . . . . 196
on the source of hæmorrhage during separation of . . 315
Pleuro-pneumonia, on the characters of the prevalent . . 71
Pneumonia, epizootic, inoculation in . . . . 64
POLLI, Dr., on transfusion of blood . . . . 247
Polypus uteri, cases of . . . . . 218
PORTER, Dr., case of extra-uterine gestation . . . 213
PRAVAZ, M., on the treatment of aneurism by the injection of perchloride of iron into the sac . . . . . 292
Processus-dentatus, a remarkable case of fracture of . . 142
Prolapsus ani, mechanical support in . . . . 152
uteri, on a new mode of treatment . . . 217
cured by retroflexio uteri . . . 218
Provisional callus, on . . . . . 122
Puerperal mania, chloroform as a preventive of . . . 207
state, influence of, upon the duration of disease . . 207
Purulent diathesis in new-born children . . . 228

RADCLIFFE, Dr., on questionable utility of tracheotomy in epilepsy . 50
on affections allied to epilepsy . . . 256
RAMSBOTHAM, Dr., on cases of extra-uterine gestation . . 211
cases of polypus uteri . . . 218
RANKING, Dr., a case of vitiligooidea . . . . 99
REEVES, Mr., on a case of aneurism treated by compression . . 118
Registrar-General's report, some particulars from . . . 7
REGNOSO, M., on sugar in urine of epileptics . . . 91
RENAULT, M., some statistics in hydrophobia . . . 38
Respiration, impeded, as a sign of cerebral inactivity . . 32
Rheumatism, chloroform in . . . . . 20
Rhino-plastic operation, a novel . . . . 135
RIBERI, on backward luxation of the ulna alone . . . 163
on the administration of opium by the urethra in certain cases 155
RICHARD, M., on discharge of fluid from the nipple in innocent tumours of the breast . . . . . 215
RICHARDSON, Mr. B. W., on the relation of blood-fibrin to disease . 73
ROBINSON, Dr., vital statistics of insanity . . . 24

PAGE

Roser, M., on rupture of the perinæum . . . 211
Roux, M., statistics of operations on large arteries . . 112
Ruhle, Dr., on hemiplegia caused by plugging of a cerebral artery . 32

Sandwith, Dr., on opium in certain cerebral symptoms of fever . 28
Sanitary condition of England during 1852 . . . 242
Saturnine poisoning (slow) treated by iodide of potassium . . 249
Sarcinæ in the lungs . . . . . 65
Sarcina ventriculi, case of . . . . . 81
Scarlatina, some remarks on . . . . . 18
Scald-head, on the treatment of . . . . 101
Schoenbein, on the action of ozone in miasmata . . . 5
Sciatica, rapid cure in . . . . . 37
Scleroma in new-born infants . . . . 229
Scurvy, potash in . . . . . 77
Séquard, M. E. Brown-, on the influence of red blood in restoring lost muscular and nervous irritability . 342
on the true cause of hybernation in the tenrec 356
Serre, M., on phosphene . . . . . 130
Seyfert, M., on the cure of prolapsus uteri by retro-flexio uteri . 218
Shoulder-joint, American statistics of amputation at the . . 163
Simpson, Prof., on chloroform as a preventive of puerperal convulsions 207
Simpson, Dr., on the rupture of ovarian cysts . . . 225
Skirvan, Dr., case of extra-uterine gestation . . . 215
Smallpox, collodion in . . . . . 103
Smith, Dr. Tyler, on a case of tracheotomy in epilepsy . . 52
Smith, Mr. H., on tracheotomy in croup . . . 67
Smith, Dr. C. D., on a case of aneurism of bone . . . 123
Smith, Dr. S., American statistics of amputation at the shoulder-joint. 163
Smith, Mr. H., on the sequel to Mr. Ferguson's case of excision of the head of the femur . . . . . 175
Snake-bites, treatment of, by stimulants . . . 293
Spasm of the glottis . . . . . 232
Spasmodic diseases, on . . . . . 40
Speech, on the causes of impediments of . . . 351
Speer, Dr., on mountain-sickness . . . . 19
Sperino, M., on syphilisation . . . . 296
Statham, Mr., on cholera . . . . . 14
on low inflammation . . . . 106
Stomach, on non-malignant perforation of the . . . 83
Stricture of the urethra, on . . . . . 299
Strychnia, cases of poisoning by . . . . 62
Swaine, Dr., on "suette miliare" . . . . 16
"Suette miliare," on . . . . . 16
Sugar in the urine of epileptics . . . . 91
Syme, Mr., on a new way of remedying cartilages in the knee-joint . 180
Sympathetic nerve in the neck, on the effect of dividing the . 348
Syphilis, iodide of sodium in . . . . 161
Syphilisation, on . . . . . 296

Tanner, on urea as a diuretic . . . . 93
Tanner, Dr., on the position of the patient during tapping for ovarian cysts . . . . . 223

PAGE
Taxis, on the dangers of the . . . . . 297
Taylor, Mr., on mercury in cholera . . . . . 15
Testicle, air compressor of . . . . . 156
Tetanus, cured by chloroform . . . . . 63
Thompson, Mr. H., a case of tracheotomy in epilepsy . . 52
on a new mode of performing tracheotomy . 144
Thompson, Dr. Theo., on the relation between phthisis and hysteria . 69
Tilt, Dr., on sanguineous pelvic cysts . . . . . 225
on diseases of women . . . . . 317
Toe, on lateral deviation of the great . . . . . 184
Tongue, hypertrophy and prolapse of . . . . . 137
Tonsillitis, application of nitrate of silver in acute . . 142
Tracheotomy, cases in which, may be required . . . 49
questionable utility of, in epilepsy . . . 50
in epilepsy, cases of . . . . . 51
in croup . . . . . 67
a new mode of performing . . . 144
Transfusion of blood . . . . . 247
after flooding, case of . . . 197
Trastour, M., on the treatment of compound fracture by "occlusion" 122
Trousseau, M., on epileptiform neuralgia . . . 36
Tuberculosis, statistics of . . . . . 21
Tumour, treatment of encysted, by puncture and internal cauterisation 109
Turner, Mr., a case of transfusion after flooding . . 197
Turpentine, effect of continued exposure to turpentine vapours . 96

Ulcers, treatment of, by exclusion of the atmosphere . . 110
chloroform in phagedænic . . . . . 111
treatment of obstinate, and eruptions of the leg without confinement . . . . . 183
Ulna, backward laxation of ulna alone, by M. Riberi . . 155
Urea, as a diuretic . . . . . 93
Urethra, a new operation for extracting calculi from membranous portion of . . . . . 153
on the administration of opium by, in certain cases . 155
obstruction of, cause of irritation of the bladder in children . 234
on stricture of the . . . . . 299
Urinary deposits, on . . . . . 272
Urine, albuminous, in various diseases . . . . 88
on the development of torulæ in the urine . . 88
on action of liquor potassæ upon healthy . . . 92
on prolapsus vaginæ as a cause of phosphatic and mucous . 94
and fæces in children, chloroform in some cases of retention . 236

Vaginal cystocele, a new operation for . . . . 331
Valleix, M., on the removal of mucous in the suffocative bronchitis of children . . . . . 233
Van Leeuwen, on the influence of day and night upon epilepsy . 60
Van Oven, Dr., on a case of spontaneous fracture of the thigh bone in himself . . . . . 304
Vernois, M., on the composition of the milk in health and disease . 208
Vitiligooidea, case of . . . . . 99
Velpeau, M., on iodine injections into joints . . . 125

PAGE

WADE, M., on stricture of the urethra . . . . 299
WALLER, Dr., cases of placenta prævia . . . . 196
a case of Cæsarian section . . . 202
WALTON, Mr. HAYNES, on ophthalmic operative surgery . . 279
WEBSTER, Dr., on the sanitary condition of England during 1852 . 242
WEST, Mr., on the hour of birth in 2019 cases . . . 188
WILLEMS, M., on inoculation in epizootic pneumonia . . 64
WINCHESTER, Mr., on a new mode of treating fractures . . 120
Women, on diseases of . . . . . 317
WOOD, Dr., on spasmodic diseases . . . . 40
Worms, on the development of . . . . 354

ZENKER, Dr., on sarcinæ in the lungs . . . . 65

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